

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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## Flight.

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## EDITORIAL COMMENT.

**M**R. HOLT THOMAS' paper on "Commercial Aeronautics" which he read before the Aeronautical Society on Wednesday last, was in some respects the most interesting of the series to which the members have listened during the present season. In saying that we do not by any means intend to convey the slightest hint of disparagement of any of the previous papers which have been read, and which, each in its way, has contributed not a little to the advancement of the great cause of British aeronautics. But Mr. Thomas dealt with a subject which is of surpassing general interest, and which appeals far more to the lay mind than the more scientific subjects which usually form the text of similar discourses at the meetings of a society which is mainly scientific in its interests and intentions. Moreover, the paper was the more interesting because it was convincing. The author kept well clear of prophecy, except in so far as he could base his forecasts on ascertained facts, and thus avoided the possibility

of that sort of criticism which is inevitably forthcoming when the enthusiast allows himself to be carried away by his own faith in his subject.

The full text of the paper we reproduce in another part of this issue of "FLIGHT," so that the reader can assimilate and judge it for himself. There are, however, certain aspects with which we intend to deal briefly, and some of these will entail the quotation of parts of Mr. Thomas' argument, though we do not intend to offer any apology for the duplication, the questions at issue being of more than sufficient importance to warrant the course. In his opening the author pointed out that the main question to be determined resolved itself into: "Can the aeroplane, taking into account the advantages of speed, &c., which it alone possesses, be regarded as a practical means of transport?" It follows that his main conclusion was in the affirmative.

Mr. Holt Thomas confined himself entirely to the subject of the aeroplane. The lighter-than-air machines, he pointed out, have their uses, but the cost, he thought, is too great to bring them in for commercial purposes, at any rate, at the moment. It is certain, however, that we as a nation must be first in airships, and to that end airship services, subsidised by the Government, will probably be the order of the day so far as these machines are concerned. We are inclined to agree to this, though we are by no means as certain of the practical future of the airship as we are of that of the aeroplane. That, however, is merely by the way for the present. Beginning with a very brief sketch of the history of aviation in England, the author proceeded:—

"The history of aviation in this country is lamentable, but glorious. No country has had the practical results of flying put under its very nose more than Great Britain. The first great meeting after Rheims was held at Blackpool. In 1909, I brought Paulhan to London. In 1910, the first great town-to-town flight in the world, London-Manchester, for which a prize of £10,000 was given by the *Daily Mail*, took place, and nothing in my very full life gave me greater pleasure than organising it. The Circuit of Britain was an event which ought to have convinced anyone. The airmen in the Circuit of Europe, in which I acted for this country, after passing through France, Holland and Belgium, arrived in London to meet more police than public. The first flight on Salisbury Plain, which I arranged with the late Captain Dickson, at the Military Manœuvres in 1910, would have convinced anyone but a Britisher. But luckily, like Britishers always do, we got there in the end. Now this is all ancient history, but why I refer to it is because our want of initiative was due to public apathy and apathy on the part of business men. No country depends more on public opinion than our



own. It can carry anything, and our dilatory methods in military aviation are entirely due to public apathy. The fact that a handful of machines crossed the Channel on the outbreak of war is not due to the Flying Corps. No keener body of men existed, but up to the outbreak of war they were starved. It is a wonder their enthusiasm was not entirely quenched. It was not due entirely to the War Office or the Cabinet, who, I again affirm, could do very little without public opinion behind them. The glorious record of the Flying Corps, notwithstanding their infinitesimal beginning, is now known to us all. The importance of military aeronautics is now known to us all, but nobody can say how we might have changed this war if we had taken it in time. To-night I am speaking in exactly the same strain on *commercial* aeronautics as I spoke seven years ago on *military* aeronautics, and I assert without the slightest fear that I am speaking on as large a subject, and one of just as vital importance to the Empire. But we must not let history recur. We *must* be first. No one will be quicker than the Huns to recognise the importance of this, the latest form of transport, but *this time we must be the leaders*. As British military aviation has shown, we have the men, second to none; we have the designs, and I am addressing you to-night to ask you to give the public support, the energy, the finance, and the encouragement which must be behind a movement of the kind if it is to succeed. It is a world-movement, and we *must* lead."

There is just one point in this in which we are at issue with Mr. Thomas. He takes the view that it was due to the public apathy in aerial matters that we were unprepared when the war broke out, and that the War Office and the Cabinet could do very little without public opinion behind them. To begin with, there *was* a very important body of opinion which had urged for long that we ought to take advantage of the new science, but the Government of the day was deaf to its warnings. Another, and more important point is that Governments, in theory at least, exist to lead—it is not their business to wait until they are kicked into action by the fear of losing their posts. The plain fact of the matter is that the pre-war administration hung up the development of the air services from motives of parsimony and from sheer want of prevision.

## Taxing the Industry Out of Existence.

One of the first points made by the author, and a very important one it is, was that of the incidence of the excess profits tax and its bearing on the future. As he pointed out, there will be no aircraft industry after the war unless we set to work now to create a future for it. Now, to create that future by the carrying out of commercial schemes will entail the spending of very large sums of money. It is manifestly impossible to do this unless there are funds to draw upon. The aircraft industry has, it is true, grown to enormous proportions during and as a result of the war. At first sight, then, it would probably be accepted that the war has been a very good thing for the industry. That is so, up to a point. But it has to be remembered that all the expansion that has taken place has meant the sinking of very large sums of money by way of capital, while the pre-war margin of profit made by any of the established concerns was so small that it is easy to see how they could be taxed out of existence, so far as carrying on after the war is concerned, unless, as Mr. Holt Thomas pointed out, their accounts are dealt with in generous fashion by the Government, so far as relates to what are termed "excess profits." Unless some consideration is extended in the way suggested, it is quite certain that, instead of being able to start fairly and on a thoroughly sound financial basis,

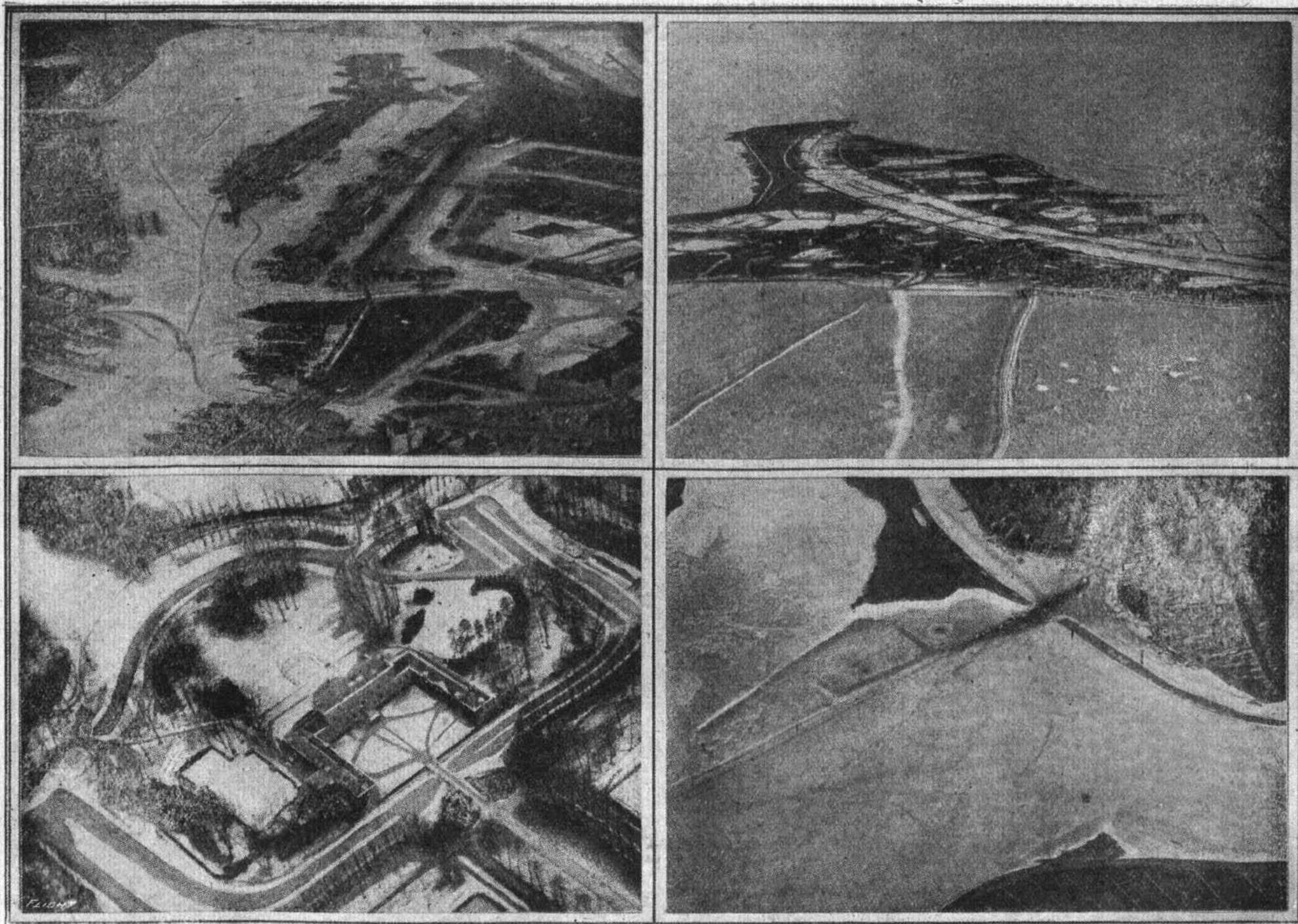
the aircraft industry will start on the commercial war almost hopelessly handicapped in comparison with foreign competitors, whose rulers have adopted a less short-sighted method of raising money to pay for the war than that most foolish of imposts, yclept, the "excess profits tax." "Most foolish" having regard to the unequal way in which the strain has been imposed without discrimination, and this in spite of the gorgeous undertakings of the Government when getting the Bill through originally. It seems to us that a very clear case can be made out for lenient treatment of the industry in this direction. What it ultimately comes down to is that it is admitted on all hands that British aviation must be first at all costs; we cannot allow our supremacy to be challenged either in military or commercial aeronautics. We have all the machinery now at work for securing and maintaining that supremacy, but, when the end of the war comes, there will of necessity be a tremendous slowing down of that machinery while we are getting through the period of transition from war to peace flying. The machinery, however, will have to be kept in working order. Whether the funds comes out of the profits that the industry ought to be making and putting on one side for commercial development, or whether the State confiscates those profits now and hands them back in the way of subsidies to recreate the industry later on, the money has got to be found. It is not a question of private interests or commercial gain, but one of national import, as we are all agreed. Of the two methods of financing future development there is no question as to which is the better, and we trust Mr. Holt Thomas, who appears already to have taken the matter up officially, will succeed in impressing his point of view upon Departments which are, as we know to our cost, by no means receptive of the broad outlook on things which involve such matters as this.

## What Aircraft Can Do.

Continuing his general remarks, Mr. Holt Thomas went on to say that while there are many things which admittedly the aeroplane cannot do, what we are really concerned with is what it *can* perform. He said it had been urged to him that aircraft could not possibly compete with trains and lorries and other forms of transport, and that they could not carry heavy weights. One man went so far as to say that an aeroplane could not carry a motor-car! As why should it? It might as well be argued that the motor-car itself is no good for transport because it will not carry a Dreadnought! As the author of the paper urged, even if all the doubters are right—which is not for a moment admitted—they have not altered the case at all. They have simply done what the Army Council did 10 years ago—they have advanced arguments setting forth what aircraft *will* not do, and have ignored altogether what they *will* do. Because the aeroplane cannot do what the train or the motor-car will do is no argument at all. The answer is that the former can go faster, and will, within certain limits, carry a given weight faster than any other form of transport. From a business point of view it must be remembered that very often speed is everything, said Mr. Holt Thomas:—

"One saw this in pre-war days in the competition between the Steamship Companies in the race across the Atlantic. A special aeroplane, *i.e.*, special used in the sense of special train, which is perfectly feasible to-day, will enable the business man to leave London in the morning, do his business in





Some interesting views from above, taken in Holland by means of aircraft. Top photos.: (left) Amsterdam Harbour from 2,500 ft.; (right) Marken Island, icebound, from 36,300 ft. Bottom photos.: (left) Castle at Zeist from 975 ft.; (right) Vollandam Harbour from 2,275 ft.

By courtesy of "Het Nieuw Oost", Amsterdam.



Paris, and be home again to dinner. It will take him to Bagdad in a day and half or New York in two days. Many business men would smile at the idea of using this mode of conveyance to-day, but the only thing is to remind them that they also smiled in the early days of motor-cars, and yet half the business to-day would take double the time to do if the motor-car were not in existence.

"Rivers suggest a very probable and certainly useful employment of aeronautics, using them as a line of flight. Huge districts in many localities, such as Africa, are controlled by officials who usually employ the river as a means of transit, using motor launches, and then inland from the nearest point. Think of replacing this by the use of seaplanes doing 100 miles an hour. This equally applies to mails. South America, Canada, Asia, all come into this scheme, and no landing ground is required. Nature has supplied it in the form of a smooth-surfaced river. Again, these ready-made roads could be followed at night with a searchlight on the machine with the greatest ease and no danger.

"The Cape to Cairo Railway again affords simply an instance which occurs over and over again in that and other countries, where an aerial service might be employed as an adjunct to the railway. The present method would probably be one's arrival at a wayside station and then, say, 50 miles in a bullock wagon, or perhaps walking, over jolty roads, or no roads at all, taking one or several days. Compare this with stepping into an aeroplane and arriving in half an hour. Certainly the development of all the Overseas Dominions will be largely affected by flying."

The author claimed that not only was the aeroplane the fastest form of transport, but it was also safe. Flying, he said, even from the first, has never been really dangerous, while to-day it has become practically as safe as any other method of travel. In flying, if statistics were taken of the number of miles flown per accident, of the number of accidents at any given aerodrome per annum, and so on, it would be found that, although there was a certain amount of risk in the air, that risk did not amount to a danger. We are glad that he approached the subject in this way, though it would have been more convincing to the man in the street if actual statistics could have been adduced to prove the statement. That, unfortunately, is quite impossible now. Most of the flying done nowadays is war flying, of which the records are not available to the public. All the latter is allowed to know is that a certain number of regrettable accidents do happen. These find their way into the papers and give a natural impression that flying must be a very dangerous pursuit. As a rule, no one outside official circles has any exact knowledge of how or why these accidents have happened, and, more important still from the point of view of future popular interest, we do not know the number of miles flown per accident. We are reasonably certain that our Service aeroplanes fly *many thousands of miles daily* under the most arduous conditions possible, and that, having regard to all the circumstances, the proportion of genuine accidents as opposed to casualties in battle is relatively small. We entirely agree that the risks of *peace* flying with modern engines and machines do not at all amount to actual danger. Unfortunately, it will require time to demonstrate this fact, for fact it is. It is not one of the things that the average man in the street is likely to take on trust just because the people who know assure him that it is so. He had to be educated up to the railway train and the motor car—a slow process in both cases. Yet these vehicles worked on a stable track with which he was perfectly familiar. When it comes to allowing himself to be carried off into the upper air, he will require even more convincing of the safety of the means of transport offered to him. He can be convinced, and will be, but we should be deluding ourselves if we imagined that the conversion

from land and sea to aerial transport is going to be accomplished in a day.

## The Running Cost of Aerial Services.

With reference to the all-important factor of the cost of aerial mail and passenger services, the author of the paper took his audience deeply into figures. He showed that, taking as an instance, a regular service between London and Paris, and allowing for nine machines in commission, each carrying twelve passengers both ways, it should be possible to make a profit of £43,000 per annum at a fare of £5 per passenger for the single journey. On the other hand, he reached the rather surprising conclusion that if the number of passengers averaged only eight per journey, at the same fares and everything else being equal, the service would result in a loss of £14,000 per annum. In arriving at his conclusions, the author based his calculations on a running cost of three shillings per mile for all charges. We should have said that such an estimate looks to be somewhat on the optimistic side, but Mr. Holt Thomas has had, we must point out, a very considerable amount of experience in the running costs of aircraft, and we must assume, therefore, that he knows what he is talking about when he places the figure so low.

Again, in the matter of mail and parcels services, he showed that, with four machines in active work, each carrying a useful load of 2,000 lbs. and earning  $\frac{1}{2}$ d. per ounce for letters and 2s. per 3 lb. parcel, the profit of the London-Paris service would work out at £60,000 per annum. With half-loads the profits would stand at £35,000, and with three-quarter loads at £14,000 per annum. Reading these figures one feels inclined to rush straight away to the City for the purpose of promoting aerial transport companies!

One great point, which was insisted upon in relation to aerial services, was reliability of machine and motor. In this connection Mr. Holt Thomas told his audience that, while he could not for obvious reasons say how many machines his firm had actually delivered at Farnborough, he could say that there had been a great many. Out of the whole series there had only been four involuntary stoppages, and each one of these was due to some minor cause, such as a stoppage in a fuel pipe, or something equally trivial. As a matter of fact, there is now no reason to believe that the aero-motor is any less reliable than the motor-car engine. That means that, so far as engine troubles are concerned, the aeroplane has actually arrived at a standard of reliability quite comparable to that of the land vehicle. Structurally, too, the aeroplane is, under all ordinary circumstances, absolutely safe in the air. It may be argued that there are the records of a number of recent accidents which would indicate that this is not so, but it must be remembered that these accidents have happened in the course of war-flying, or of training for it, in which machines are subjected to extraordinary strains which they would never be called upon to endure in ordinary peace flying. It cannot be too clearly insisted upon, in order that the lay mind may be able to appreciate this reliability aspect, that what is called "stunt" flying is a different thing entirely to the straight-away flying demanded for commercial purposes. For war and for exhibition purposes "stunts" are permissible, often essential, but the pilot who would essay them in commercial flying would assuredly lose his job on the very first occasion.



### The Necessity of Landing Grounds.

In dealing with landing grounds as accessory to any great scheme of aerial services, Mr. Holt Thomas gave it as his opinion that it would be necessary to lay them out at the rate of one to every ten miles of route to be covered. At first sight this seems to be a very generous allowance, but we are inclined to agree with the conclusion, the arguments for which will be found set forth in the paper itself. Of course, the expense would be heavy, but spread over each machine using the routes, it would really only amount to a quite nominal sum. Mr. Holt Thomas' estimate is 2*d.* per mile, which is certainly not excessive. Even that is an outside estimate, based on the figures of the London-Páris service alone. The fact that many other services would use that route reduces the cost per aeroplane mile very considerably, and the same deduction will apply to each of what may be called the trunk routes. No doubt there will be difficulties to be surmounted, but they will not be found insuperable. As a matter of fact, those difficulties will in practice be found to be far less than those encountered in building a railway, for example, where provision has not only to be made for acquiring land for intermediate and terminal stations, but for the permanent way itself. In the case of the aeroplane service all we require is the intermediate stations, and even these need not entail more than the expenditure of a very nominal sum to make them suitable for their purpose. Mr. Holt Thomas estimates that the cost of upkeep per station need not exceed £250 a year, which is little enough in all conscience. However, it is impossible to deal in the way of comment with every aspect of the paper, which our readers will peruse for themselves and arrive at their own conclusions regarding the author's theories. For ourselves, we see nothing in it but what has a sure foundation on fact. Its main interest is that it sedulously avoids the unpractical; its principal conclusions are the results of actual experience over a period of years, and we see no reason at all, provided the public can be converted to the possibilities of aerial transport and will come along with the money, why the theories of to-day should not become the accomplished facts of to-morrow. In the meantime we tender our congratulations and thanks to Mr. Holt Thomas for an exceedingly well-reasoned and temperate statement of the case for commercial aviation in the immediate future.

### Looking to the Future.

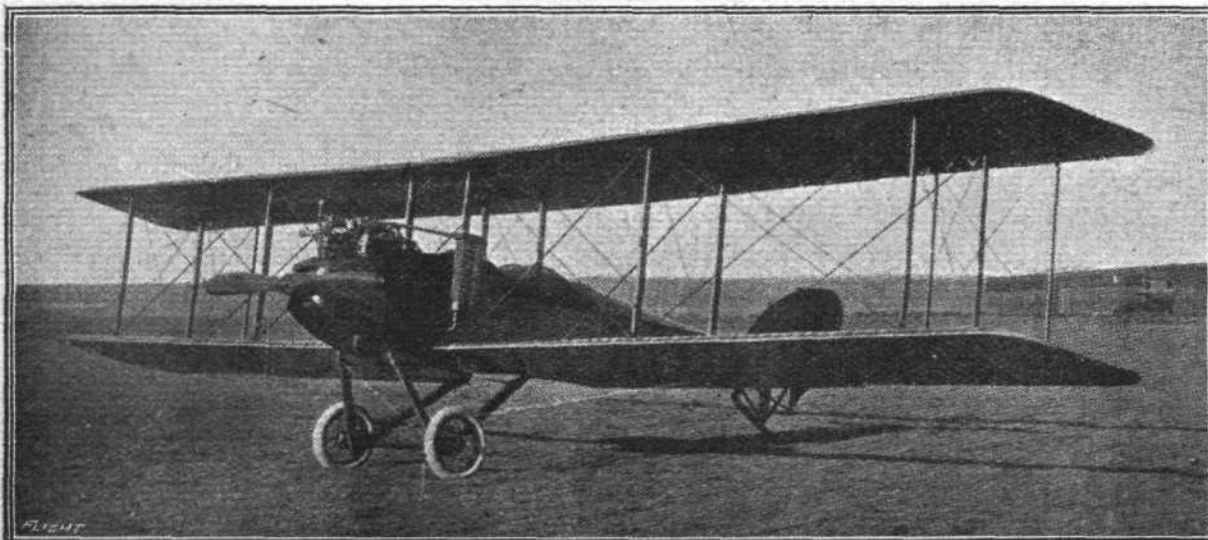
In a recent issue of the New York journal, *The New Republic*, there appears a very well-reasoned article entitled "Our Duty in the Air." There is a good deal which applies as well to this country as to the United States, particularly with regard to the necessity for a continuous policy and also for co-operation between the countries who are now fighting as Allies in a common cause, and who will, when peace reigns again, equally figure as Allies in the development of aviation. *The New Republic* says:—

"We are peculiarly rich in wood and in firms that work in wood. Furniture firms and canoe firms, for instance, are admirable candidates for a selective draft into the ranks of the makers of aeroplane bodies. For aeroplane motors, besides our present manufacturers, we are happy in possessing an unparalleled number of firms making motors for motor cars and for motor boats. From corresponding firms on the other side of the Atlantic there have come some of the best aeroplane motors of the war. Certain of the largest and most formidable English aeroplanes are equipped with motors built by Rolls-Royce.

"The United States has the equipment, actual and potential, capable of being expanded to the desired capacity within a period of only a few months. And it has the skill, on two conditions: First, that models and instructors are furnished copiously by the French and the English to show us such specifications and methods as we may not now understand; and, second, that orders are placed by our Government, not only copiously, but continuously, for several years to come to justify the expansion undertaken.

"I say continuously, because continuity is essential to sound technical progress. The Advisory Committee on Aeronautics has calculated that our permanent air service will demand an annual supply of 4,000 new aeroplanes. Why should it not be possible for the Administration and the Congress to establish an aerial building programme at least as definite as the three-year naval building programme laid down in the Navy Act of August 29th, 1916? Under such conditions we should see sound technical progress rapidly made by manufacturers of a solid sort, experimenting towards the hope of participation in a known business."

Practically nothing is needed in the way of comment. The food for thought is there, and we commend it to the British industry and to those in whose hands lies the future of civil and military aviation.



The Wright-Martin two-seater reconnaissance tractor biplane used by the U.S. Government. This machine differs from the model R ("FLIGHT," March 1st, 1917) in many respects, notably the equal-span wings, the tail, and chassis.



## HONOURS.

### Honours for R.N.A.S.

It was announced on May 23rd that the King had been pleased to give orders for the following appointment to the Distinguished Service Order:—

*To be a Companion of the D.S.O.*

**Flt. Sub-Lt. JOHN JOSEPH MALONE, R.N.A.S.**—For successfully attacking and bringing down hostile aircraft on numerous occasions. At about 6.30 a.m. on April 23rd, 1917, while on patrol, he attacked a hostile scout and drove it down under control. He then attacked a second scout, which, after the pilot had been hit, turned over on its back and went down through the clouds. A third scout, attacked by him from a distance of about 20 yards, descended completely out of control. While engaging a fourth machine he ran out of ammunition, so returned to the advanced landing ground, replenished his supply, and at once returned, and attacked another hostile formation, one of which he forced down out of control. On the afternoon of April 24th, 1917, he engaged a hostile two-seater machine, and, after badly wounding the observer, forced it to land on our side of the lines.

The King has been pleased to approve of the award of the Distinguished Service Cross to the following Officers:—

**Flt. Lt. LLOYD SAMUEL BREADNER, R.N.A.S.**—For conspicuous gallantry and skill in leading his patrol against hostile formations. He has himself brought down three hostile machines and forced several others to land. On April 6th, 1917, he drove down a hostile machine, which was wrecked while attempting to land in a ploughed field. On the morning of April 11th, 1917, he destroyed a hostile machine, which fell in flames, brought down another in a spinning nose-dive with one wing folded up, and forced a third to land.

**Flt. Sub-Lt. JOSEPH STEWART FALL, R.N.A.S.**—For conspicuous bravery and skill in attacking hostile aircraft. On the morning of April 11th, 1917, while escorting our bombing machines, he brought down three hostile aircraft. The first he attacked and brought down completely out of control. He was then attacked by three hostile scouts, who forced him down to within about 200 ft. of the ground. By skilful piloting he manoeuvred his machine close behind one of them, which was driven down and wrecked. Shortly afterwards this officer was again attacked by a hostile scout, which he eventually brought down a short time before recrossing the lines. He then landed at one of the aerodromes, his machine having been riddled with bullets from the hostile machines and also by rifle fire from the ground.

### Honours for the R.F.C.

In a supplement to the *London Gazette* issued on May 27 it was announced:—

The King has been pleased to award a Bar to the Distinguished Service Order to:—

**Lt. (temp. Capt.) A. M. WILKINSON, D.S.O., Hamp. R. and R.F.C.**—He came down to a low altitude and destroyed a hostile scout which was attacking one of our machines, the pilot of which had been wounded, thereby saving it. In one day he shot down and destroyed six hostile machines. He has destroyed eight hostile machines during the past 10 days and has displayed exceptional skill and gallantry in leading offensive patrols. (D.S.O. gazetted October 20th, 1916.)

The King has been pleased to approve of the appointments of the following officers to be Companions of the Distinguished Service Order in recognition of their gallantry and devotion to duty in the Field:—

**Temp. Sec. Lt. C. O. B. BEALE, Gen. List and R.F.C.**—He made two most gallant attempts to carry out a special mission, which involved a night flight of about 50 miles, in very adverse weather. Although unsuccessful, he showed throughout the greatest courage and determination to achieve his mission.

**Temp. Sec. Lt. (temp. Capt.) A. W. BIRD, Gen. List and R.F.C.**—For conspicuous gallantry and devotion to duty on many occasions. When on artillery patrol he succeeded in reporting 13 active batteries, observing fire on and silencing several of them. On another occasion he attacked and scattered with machine-gun fire two parties of the enemy which were seen forming up. This operation was carried out for a period of 2½ hours in very adverse weather conditions.

\***Capt. (temp. Maj.) H. DE HAVILLAND, R.F.C., Spec. Res.**—He attacked and drove down a hostile machine. This is the

\* This name has previously been published without deeds.

second enemy machine he has destroyed. He has rendered invaluable service throughout the operations, and has at all times set a magnificent example.

The King has been pleased to award a Bar to the Military Cross to the under-mentioned officers:—

**Capt. R. OXSPRING, M.C., York. L.I., Spec. Res. and R.F.C.**—For conspicuous gallantry and devotion to duty on several occasions. He has brought down three hostile machines, and in addition has forced several others to land. He has at all times set a splendid example of courage and initiative. (M.C. gazetted January 14th, 1916.)

The King has been pleased to confer the Military Cross on the following Officers and Warrant Officers in recognition of their gallantry and devotion to duty in the Field:—

**Sec. Lt. (temp. Lt.) L. W. ALLEN, R. War. R., attd. R.F.C.**—When acting as an observer, on many occasions he has helped to shoot down and destroy hostile machines. He has shown the greatest coolness and skill on all occasions, frequently clearing difficult jams in the middle of a fight.

**Lt. (temp. Capt.) H. H. BALFOUR, K.R.R.C., Spec. Res. and R.F.C.**—On many occasions he has carried out many valuable reconnaissances under very adverse conditions. He has shot down two hostile machines.

**Temp. Lt. (temp. Capt.) A. BINNIE, Gen. List and R.F.C.**—He came down to 50 ft. and attacked a hostile kite balloon on the ground. He has on previous occasions shot down and destroyed three hostile machines.

**2nd Lt. W. BUCKINGHAM, R.F.C., Spec. Res.**—He displayed great courage and initiative in carrying out a patrol in heavy rain, with clouds, at 500 ft., during an enemy attack. He obtained valuable information, and undoubtedly contributed largely to the successful repulse of the enemy.

**Temp. 2nd Lt. W. R. COX, D. of C. L.I., attd. R.F.C.**—He displayed great courage and initiative in carrying out a patrol in heavy rain, with clouds at 500 ft., during an enemy attack. He obtained valuable information, and undoubtedly contributed to the successful repulse of the enemy.

**2nd Lt. (temp. Lt.) J. GILMOUR, Argyll and Sutherland Highlanders and R.F.C.**—For conspicuous gallantry and devotion to duty in carrying out long-distance bomb raids. On one occasion, although his engine began to fail, he continued to lead his formation, and succeeded in bringing back most valuable information.

**2nd Lt. W. W. GLENN, R.F.A. and R.F.C.**—He saved one of our machines from being destroyed, and drove down a hostile machine out of control. Later, although severely wounded, he succeeded in bringing down a second hostile machine.

**Temp. Lt. E. G. GREEN, R.E. and R.F.C.**—As an observer, he has on several occasions brought down hostile machines and has carried out many successful photographic reconnaissances. He has at all times set a fine example of courage and initiative.

**2nd Lt. L. B. JONES, Welsh R. and R.F.C.**—When acting as an observer, he has on many occasions assisted in beating off hostile machines. He has done exceptionally fine work in artillery observation.

**Temp. Lt. P. J. V. LAVARACK, Gen. List and R.F.C.**—While on a photographic patrol he shot down and destroyed a hostile machine. He has done consistently good work in artillery observation and photography throughout the operations.

**2nd Lt. (temp. Capt.) A. L. NEALE, Lincoln Regt. and R.F.C.**—For conspicuous gallantry and devotion to duty on many occasions. He carried out two successful contact patrols, flying for a considerable period very low and on our barrage, rendering very complete reports on each occasion. He has rendered particularly good service in observing for siege batteries.

**Lt. (temp. Capt.) J. H. NORTON, Gen. List and R.F.C.**—He reconnoitred the enemy's wire at the height of 300 ft. and brought back most valuable information. He has at all times displayed great courage and skill.

**2nd Lt. (temp. Capt.) F. L. J. SHIRLEY, York R. and R.F.C.**—He displayed great courage and skill on many occasions in photographing the enemy's position. On one occasion, although severely wounded, he completed his work, and succeeded in landing his machine safely.

**2nd Lt. G. R. Y. STOUT, A. and S. Highlanders, attd. R.F.C.**—When on infantry contact patrol he flew twice for periods of two hours at a very low altitude, and on each occasion brought in a very complete and detailed report of the situation of the attack. He has at all times displayed great courage and skill.

**Capt. J. T. WALLER, Leicester R. and R.F.C.**—He has



consistently carried out with unfailing success long reconnaissances and daring bombing raids.

Lt. W. A. BISHOP, Can. Cav. and R.F.C.—He attacked a hostile balloon on the ground, dispersed the crew, and destroyed the balloon, and also drove down a hostile machine which attacked him. He has on several other occasions brought down hostile machines.

The King has been graciously pleased to approve of the following rewards for distinguished service in the field:—

*Awarded the M.C.*—2nd Lt. M. L. MAGUIRE, Conn. Rang. and R.F.C.

The King has been pleased to approve of the award of the Distinguished Conduct Medal to the following for acts of gallantry and devotion to duty in the field:—

Z 185 Flight-Sergt. D. GRANT, R.F.C.

Z 181 Sergt.-Maj. J. E. PEARSON, R.F.C.

The King has been pleased to award the Military Medal for bravery in the field to the undermentioned:—

10708 Pte. T. E. ALLUM, E. Surrey, att'd. R.F.C.

#### Italian Decorations for R.F.C.

It was announced in a supplement to the *London Gazette* that the following Decorations and Medals have been conferred at various dates by the King of Italy:—

THE ORDER OF ST. MAURICE AND ST. LAZARUS.

*Officer.*

Brevet Lieut.-Col. (temp. Brig.-Gen.) D. Le G. PITCHER, Indian Army.

*Cavalier.*

Lieut. (temp. Major) S. A. CURRIN, R.F.C. (S.R.).



#### Aerial Activity in Belgium.

ATTACKS by Allied airmen, not only on the Belgian coast, but also on points of military importance behind the German lines in Flanders, are daily increasing in numbers and intensity, states the *Daily Telegraph* correspondent in Rotterdam. On May 25th, a very large squadron was observed from the Belgo-Dutch frontier coming from the westwards in the direction of Belgium, whence later came sounds of heavy explosions. Later the squadron, in returning, skirted the Belgian coast, where it was heavily fired upon by German batteries. It is reported that the airmen during the expedition dropped bombs on a new German aeronautical camp in Flanders.

"The largest fleet of Zeppelins yet seen passed the Dutch coast on the night of the futile raid on England. It consisted of 10 airships, which at 10 o'clock disappeared westwards. Later reports of yesterday's movements of Zeppelins indicate that they were hopelessly at a loss as to their whereabouts, not only over England, as the news from your side clearly shows, but also during the return journey to Germany. They came straggling back in a haphazard manner, in one case

#### THE MILITARY ORDER OF SAVOY.

*Cavalier.*

Capt. (temp. Major) T. V. SMITH, M.C., R.F.C. (S.R.).

#### SILVER MEDALS FOR BRAVERY.

Temp. 2nd Lieut. (temp. Capt.) A. W. BIRD, Gen. List and R.F.C.

2nd Lieut. G. G. CALLENDER, R.F.C. (S.R.).

Lieut. (temp. Capt.) H. E. Hartney, Spec. List and R.F.C.

Lieut. (temp. Capt.) H. W. G. Jones, Welsh R. and R.F.C.

Temp. Lieut. (temp. Capt.) J. M. McALERY, Gen. List and R.F.C.

2nd Lieut. F. H. B. SELOUS, R. W. Surrey and R.F.C.

Capt. A. W. TEDDER, Dorset and R.F.C.

#### BRONZE MEDAL FOR MILITARY VALOUR.

2188 1st Air Mech. G. W. ALLEN, R.F.C.

4790 Sergt. J. H. BOOTH, R.F.C.

40286 2nd Air Mech. R. H. CALCUTT, R.F.C.

11820 Sergt. J. A. CUNLIFFE, R.F.C.

2679 Sergt. G. H. CURRALL, R.F.C.

5025 Sergt. J. H. R. GREEN, R.F.C.

2124 Corpl. C. S. HOSEGOOD, R.F.C.

3403 Sergt. W. JOINER, R.F.C.

3053 Corpl. H. G. W. LOCK, R.F.C.

9606 Corpl. S. W. MACHIN, R.F.C.

3685 Flight-Sergt. G. MARRINER, R.F.C.

1933 Flight-Sergt. P. WARNER, R.F.C.

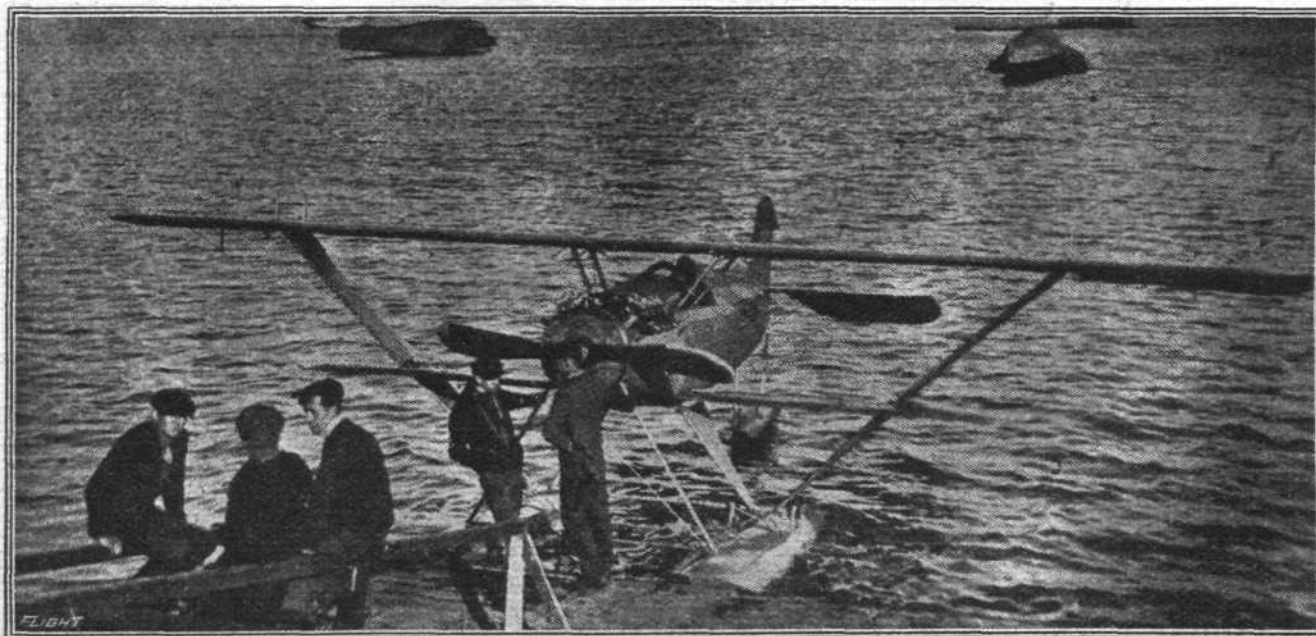
The King has give unrestricted permission in all cases to wear the Decorations and Medals in question.

flying low over a Dutch island without apparently knowing whether over Holland or Germany. As it was immediately fired upon, the airship changed its direction."

#### New Aeroplane-Strafing Devices.

MR. W. BEACH THOMAS, writing to the *Daily Mail* from the War Correspondents' Headquarters in France, on May 22nd, said:—

"Even airmen are attacked by new artillery devices, but each new threat seems to stir our pilots to more impudent acts of daring. During this fight in the Hindenburg Line one of our airmen set out to attack German balloons. He frightened two down and set fire to a third, but as he came away was fired at from the ground by a host of shells that rather resembled inflammatory rockets or Roman candles than the usual shrapnel. Instead of avoiding the menace he swung round and dived even lower and proceeded to bombard the men manning the battery that fired those portentous rockets. His daring had its reward, and all the unwounded German gunners scattered and fled and our airman flew away in peace."



Courtesy of "Flying."

A small "single-strutter" tractor seaplane scout, built by the Burgess Co., of Marblehead, Mass., U.S.A. Pilot Earl S. Doherty is standing in front of the machine (on right).



# "THE NAVY-THAT-FLIES."

## III.

As far as bombing operations are concerned, the Navy-that-Flies confines its attentions principally to the German bases along the Belgian coast and any lurking submarines or vagrant destroyers observed in the vicinity. Bombing is carried out by both aeroplanes and seaplanes, and differs from other forms of war flying in that it is principally performed at night.

Engine trouble over enemy territory means almost infallible capture or death for the pilot of a bombing aeroplane. Yet in cases of disablement, rather than come down on the ground and suffer themselves or the machine to be taken prisoner, it is their gallant tradition to try and struggle out to sea. Here they stand about as much chance of life as a pheasant winged above a lake, but the machine sinks before German hands can touch it.

One such descent was observed by two French flying boats which were out on patrol. The Boches, smarting under the effect of the bombs she had succeeded in dropping, were retaliating in the most approved Germanic manner by plastering the helpless machine with shrapnel as she slowly sank.

The two French flying boats sped to the rescue, and alighted in the water beside the wrecked British machine. One embarked the observer, who was wounded, and in spite of redoubled fire from the shore, succeeded in returning safely. The other French flying boat actually embarked the remaining occupants of the bombing machine, but was hit as it rose from the water, and fell disabled. The French pilot, seeing a Boche seaplane approaching, and a bevy of small craft inshore coming out against them, scribbled a message to say that his venture had failed, and having, with true Gallic dauntlessness of spirit, added "Vive la France," fastened the missive to the leg of his carrier pigeon, and released it before rescuers and rescued were taken prisoners.

From time to time curt official announcements of successful bomb raids upon German destroyer and submarine bases appear in the Press. It may be that the Naval honours or casualties lists are swelled thereby.

One by one the leather-clad pilots conclude their final survey, and climb up into their machines. A couple of hours later one of the machines circles overhead, and finally comes to earth. The pilot climbs stiffly out of his seat, pushing up his goggles, and puckers his eyes in the light of the lanterns as he fumbles for his cigarette case. "Got 'em," he says, laconically. "Seaplane sheds on the mole. Time for another trip?"

Dawn is breaking when No. 4 returns, tired-eyed and more monosyllabic than ever. It came off all right, but No. 3 had seemed to lose control and slid down the beam of a searchlight with shell and balls of red fire (some new stunt, he supposed) bursting all about her. However, she got her bombs off first, and touched up something that sent a flame 200 feet into the air. He himself bombed a group of searchlights that were annoying him and some trucks in a railway siding. The speaker has an ugly shrapnel wound in the thigh, and observes with grave humour that his boots are full of blood—this is a Navy joke, by the way. Also that he could do with a drink.

But it came off all right.

Now the seaplanes, who undertake much the same sort of job, contemplate their stern mission with an inextinguishable and fathomless sense of humour. This may be accounted for by the fact that in life and death they are more in touch with the native element of the Navy-that-Floater, and share much of its light-heartedness in consequence.

They fight when they must, and the straightest shot wins. If hit, unless hopelessly out of control, they take to the water like a wounded duck. If the damage is beyond temporary repair, they sit on the surface and pray for the dawn and a tow from a friendly destroyer.

No aerial adventure is ever recounted (and the array of D.S.O. ribbons round their mess-table is witness of the quality of these blind-fold flights) without its humorous aspect well-nigh obliterating all else. One who fought a Zeppelin single-handed with a Webley-Scott pistol and imprecations found himself immortalised only in the pages of a monthly magazine of Puck-like humour they publish—Fate and funds permitting.

Another, disabled on the water off an enemy's port succeeded in getting his engine going as the crew of an armed trawler were leaning over the bows with boathooks to secure him. He rose from the water beneath their outstretched hands and recalled with breathless merriment nothing but the astonishment on the Teutonic faces.

A third, similarly disabled, was approached on the surface by a German submarine. He raked her deck with his Lewis gun and kept her at bay—by the simple expedient of picking off every head that appeared above her conning tower—until she wearied of the sport and withdrew. From a seaplane point of view it was a pretty jest.

The Navy-that-Flies is quickly building up its own peculiar and imperishable traditions. Not least of these is the seaplanes' invincible gaiety of spirit.



Seaplanes on an island off what was German East Africa. These machines "spotted" for the gunners on the monitors which destroyed the "Königsberg."



# AIRISMS FROM THE FOUR WINDS

WHAT a mass of latent talent there is, to be sure, in the squadrons of the Flying Services. In various forms it is always-cropping out. The other day a modest little booklet reached this office, between the covers of which are gathered together "Last Post" and a few other poems by P. C. Stacpoole-O'Longan, Royal Irish Regiment and a "Wings" man now away in France. Although not yet out of his teens—some of the verses were his work at 16, some at 17, and the last in the tiny volume, which we reprint below, when Mr. O'Longan was but 18. There is a distinct strain of

K. OF K.

SLEEP on! Sleep on, beneath the deepest wave,  
Unmeasured e'en as thine own genius; swayed  
Not by a careless breath. Thou wert obeyed  
Within thy span by us; but naught could save  
E'en thee, our firmest rock: thou hadst to slide  
Also into the sea of death. Have rest  
Within thy ghostly sphere, for we are blest  
By thine example. Thy virtues still abide  
With us, stern warrior: they must always last  
Until the very stars fall from the sky.  
I heard our guns afar (and held my breath),  
Smiting the foe upon the Danish waste.  
The loud victorious echoes rolled by  
And formed fit wreath for thy brow wrapt in death.  
P. C. Stacpoole-O'Longan.



Mr. P. C. Stacpoole-O'Longan.

originality about the young poet's thoughts, and in giving "K. of K." (who of all men appreciated what aviation meant for the Army), by way of example, we venture to think neither the subject nor its treatment need much apology.

SCIENTISTS and the like, when on the track of their pet hobbies, leave little to chance in securing the object they may at the moment have in view. Archaeologists are probably the most virulent of any "experts" in putting the preservation of their particular tit-bits in front of all other considerations. That there has been plenty of scope during this war for the exercise of these qualities, as against the devastating Hun, there is not very much doubt, and an illuminating little episode in the Holy East, as recounted by the President of the Royal Geographical Society at their annual meeting on Monday, shows how, in achieving his object, an archaeologist brought the seaplane into use and, at the same time, carried out some very useful enemy strafing in one operation. —It was a case of minimising the risk of damage to a Greek temple in Asia Minor, adjacent to an enemy's arms depôt. The scientist set to work and carried through, by means of a waterplane, a successful bombardment of the dangerous depôt until all risk by reason of its proximity to the precious relic had been removed.

A "BEAR" TIP.—Overheard recently at an aerodrome listening post:—

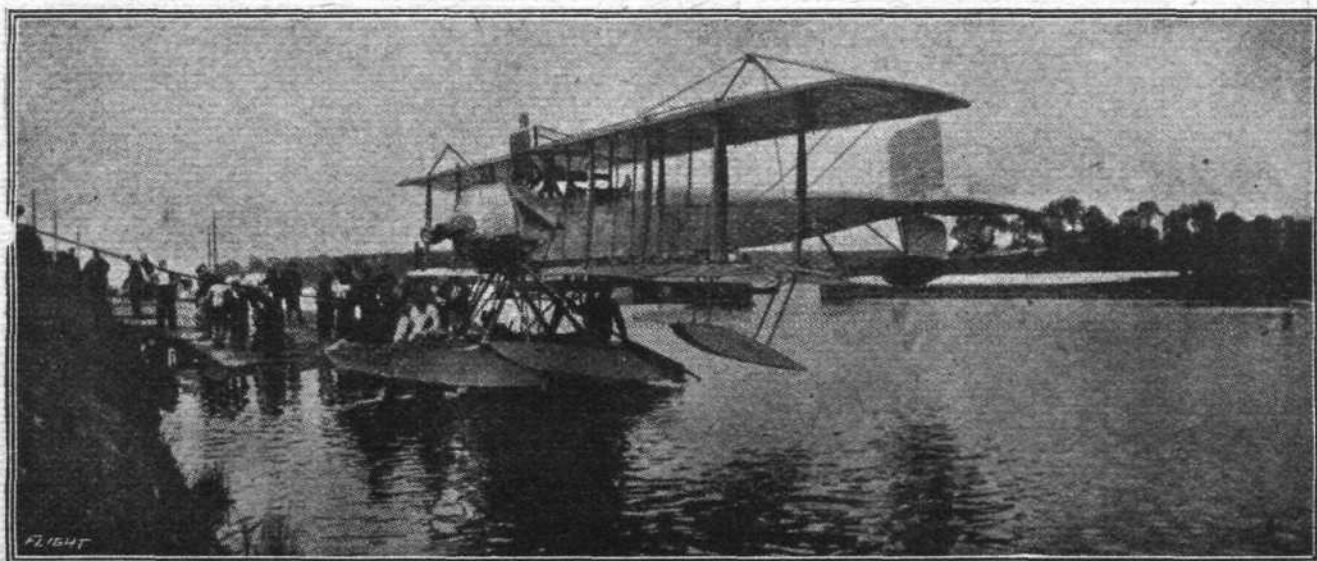
JOBBER: I can put you in to something now standing at about 50, which I can guarantee for a fall to 30 before the end of the week.

CONFIRMED BEAR BROKER: You guarantee a drop of 20 points?

JOBBER: I do; and it may even quite easily go down to 30 or so.

C.B.B.: Great Scott, what is it?

JOBBER: Flight-Lieutenant Skihigh's thermometer!



Courtesy of "Aerial Age."

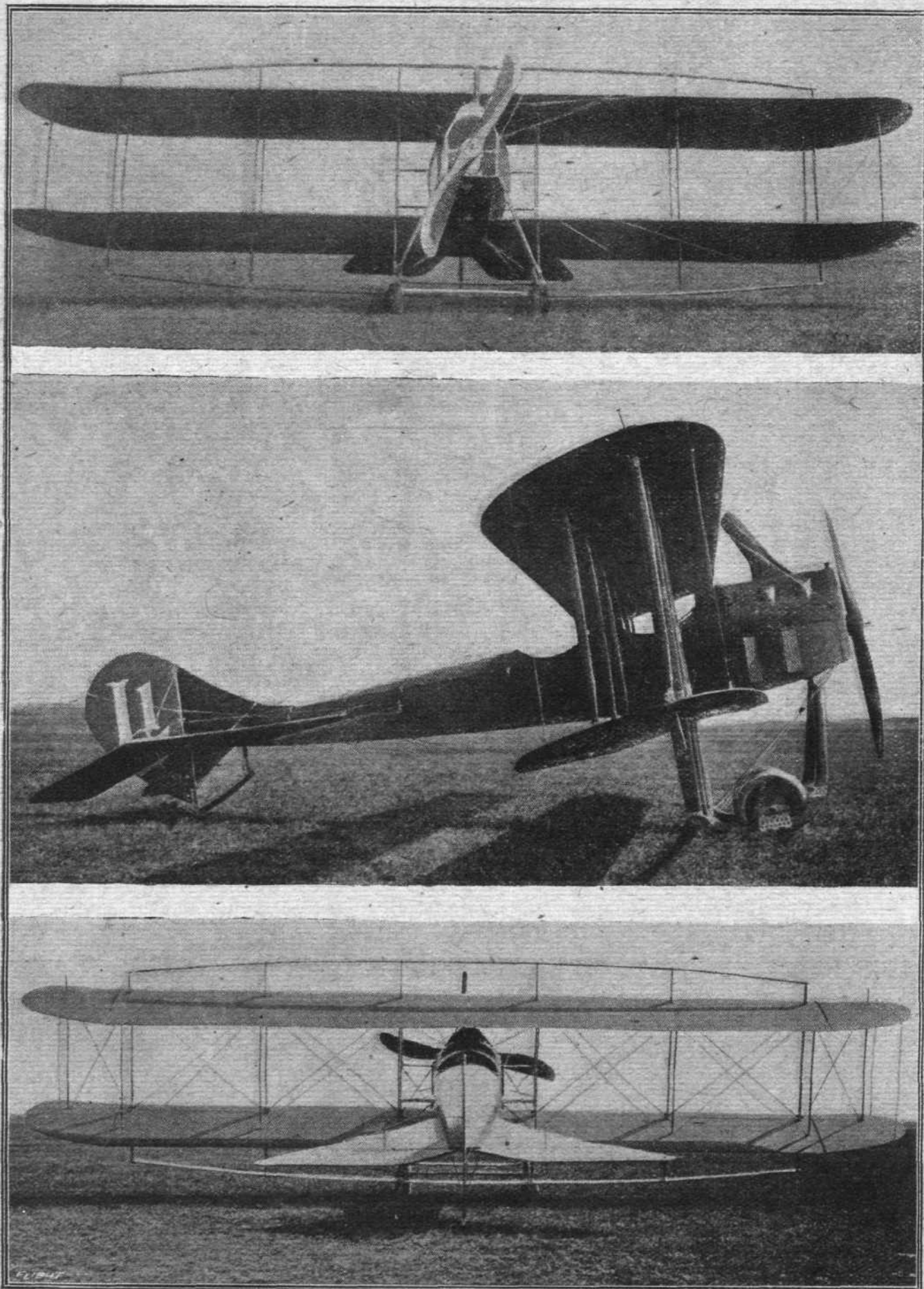
THE PAUL SCHMIDT TRACTOR SEAPLANE.—A similar machine was presented by Mr. August Belmont to the U.S. Navy, and is now undergoing tests at Pensacola.



THE War Museum, with local "offshoots," looks like being a very healthy war baby. No branch will be complete without its aviation section.

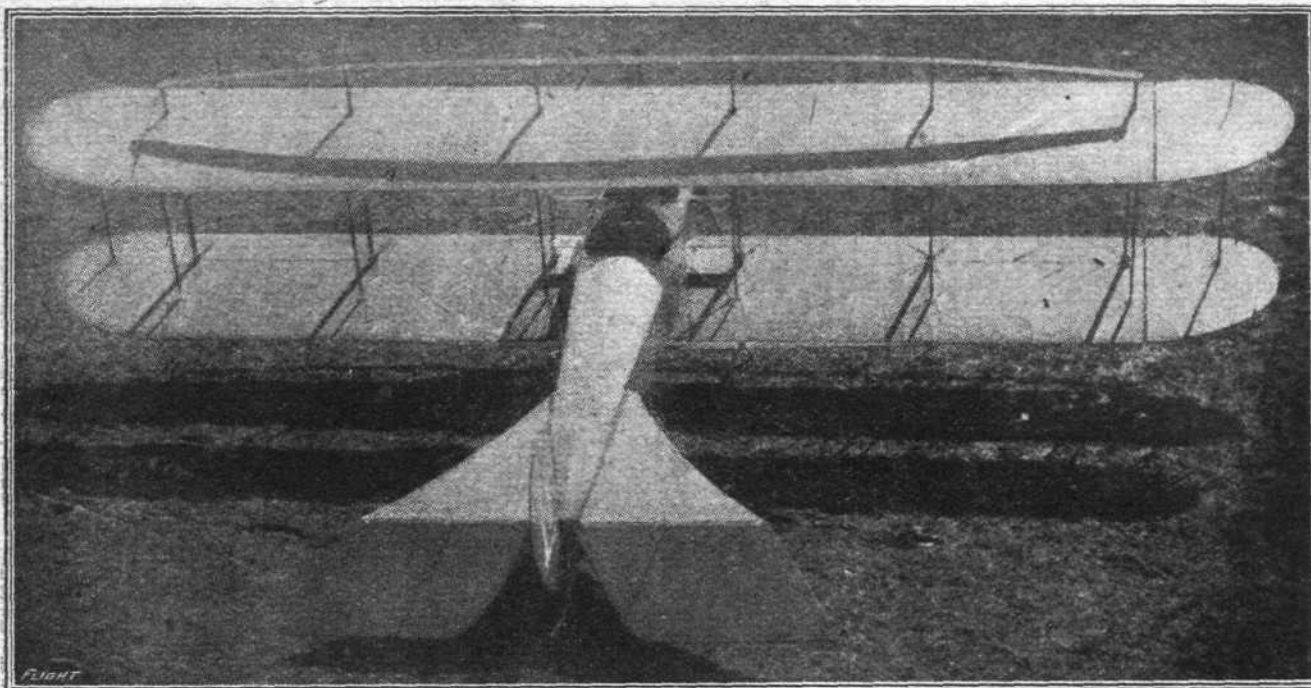
OFFICIAL notification is to hand that the United States Government have decided to "hustle" the aviation side of

their allyship for all they are worth. That side, with increasing help against the submarine pest, and the Huns will not be long in realising they have, by their latest piratical methods, brought more down on them from the entry of our new Ally than they even bargained for. There'll be time then to bring over the 10 million odd Americans who are already well in sight for taking the floor on behalf of the civilised world.



AN AMERICAN VARIABLE ANGLE OF INCIDENCE AEROPLANE.—Three views of the Lanzius tractor biplane, designed and built by the Lanzius Aircraft Co. of New York, U.S.A. We hope to give particulars of this interesting machine later.





Another view, from above, of the Lanzius variable angle of incidence biplane.

LOOKS as if the Germans were trying to forestall Mr. Holt Thomas in his "Commercial Aeronautic" lecture this week. The *Berliner Tageblatt* announces that, at the invitation of the Austrian Aero Club, a preliminary meeting was held at Vienna on May 9th to discuss "the establishment of uniformity among the Central States in aerial transport and aerial transport law." Germany was represented by Major von Tschudi and a lawyer named Tauber. Major von Tschudi is a retired Army officer, who, after representing Krupps for several years in Morocco, returned to Germany about six years ago, and has since taken a leading part in the development of the German naval and military air service. He was the organizer of the Johannisthal aerodrome, which may be said to have been the chief centre of German aerial preparations for the war. The *Tageblatt* adds: "The discussions are directed against the efforts of particular groups of interested persons who desire to establish aerial transport routes on an international basis. This conference was summoned in order to prevent any separate undertakings which could give foreign countries an insight into German aeronautical interests."

MRS. GILICK, the sculptress, is making a feature in her work of medallion portraits of pilots of the air who have

excelled in the war. One excellent example of her art is a medal of Captain W. Leefe Robinson, V.C.

IN past days at Hendon, from time to time, it has fallen to our lot to place on record illuminating little episodes illustrative of the views upon aviation, pertaining amongst some of the lesser lights of the general public. From a reliable reader in Lincolnshire we have just received the following gem, which we think will take some beating: "Two pilots had been practising fighting in the air within sight of a town near their aerodrome. That evening an officer who went into the town was stopped by someone asking him if the machines both got home safely. He answered 'Yes,' and asked the reason for the question, and then learnt that the current report was that one of the machines had had an accident and the other machine was trying to tow him home."

HOPE the two fair "boatists" at Hampton Court during the holidays are none the worse for their ducking through watching the gyrations of an aeroplane without regard to the trimming of their own frail craft.

Via the *Esbjerg Post* comes the news that the fishing boat "Energi" last Saturday saved two officers of a wrecked



A group of the latest American pilots to serve in the cause of the Allies in France. They are members of the Lafayette Corps, the first unit to take the American flag to the front in Europe.

Courtesy of "Flying."



German seaplane in the North Sea. The officers completely destroyed the seaplane before boarding the ship. A few minutes later a Zeppelin arrived and took them off. Wonderful to relate, the Zepp. Commander did not at the finish proceed to sink the rescuers of their brother airmen.

LIEUT. OTTO THELEN, the recently escaped and re-captured German airman, lets a little light in upon the direction of least resistance to follow by prisoners of war when endeavouring to make good their escape, viz., to reach the sea *via* some river and take chances of getting picked up by some friendly "alien" craft. Upon Thelen's first try it nearly came off. He and his companion, after hiding for three days in a boat,

managed to actually reach the sea, where, however, their adventure ended by the boat they struck *not* being of the "friendly" alien type. Judging by his latest exploits, Thelen should do well in Germany presently if burglary becomes a legalised calling after the war amongst Hunnish Kultured Arts.

THOSE who have not forgotten the early days of the R.F.C. (Military Wing) will be interested in the following announcement, which appeared in the *London Gazette* of May 23rd:—

*Temporary Appointments at the War Office.*  
Deputy-Director.—Brevet Lieut.-Col. F. H. Sykes, C.M.G., Hrs., from an A.A.G., and to be Temp. Brig.-Gen. whilst so employed; Feb. 8th.

## The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

### Club House.

The following prices have been fixed for the present by the Committee:—

Bedroom (including Bath) .. ..	5s. each per night.
Breakfast .. ..	2s. 6d.
House Luncheon .. ..	2s. 6d.
House Dinner .. ..	3s. 6d.

### Billiard Room.

The Billiard Room is now open for the use of the Members.

### Flying Services Fund.

Boxes for collecting subscriptions for the Flying Services Fund are now available, and anyone wishing to have a box can obtain the same on application to the Secretary.

### THE FLYING SERVICES FUND

administered by

### THE ROYAL AERO CLUB.

The Flying Services Fund has been instituted by the Royal

Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 3, Clifford Street, New Bond Street, London, W. 1.

### Subscriptions.

	£	s.	d.
Total subscriptions received to May 22nd, 1917	11,757	4	11
Employés of Ruston, Proctor and Co., Ltd.,			
Aircraft Works (Eighteenth contribution) ..		1	10 0

Total, May 29th, 1917 .. .. 11,758 14 11

B. STEVENSON, Assistant Secretary.

3, Clifford Street, New Bond Street, W. 1.

## AVIATION IN PARLIAMENT.

### Royal Flying Corps.

MR. BILLING, in the House of Commons, on May 22nd, asked whether an Army Order or any other Order has been issued by the authorities at home or abroad forbidding officers or men of the Royal Flying Corps or any other portion of the Army to criticise or comment upon the B.E.8 biplane; if so, whether this Order refers to the B.E.8's in use at home as well as abroad; whether this Order has been issued because the inherent defects of this type of aeroplane make it particularly liable to criticism; whether a Brigade Order has been issued to any brigade of the Royal Flying Corps in France forbidding officers to criticise the aeroplane on which they are mounted; and whether, in such an Order, officers have been warned that their remarks may be distorted by critics of the Royal Flying Corps through ignorance or malice?

The Parliamentary Secretary to the Air Board (Major Baird): No Order has been given at home or abroad forbidding officers and men of the Royal Flying Corps or any other portion of the Army to criticise or comment upon aeroplanes. Criticism and gossip about new types of aeroplanes of which the critics have no real experience, is discouraged. This policy has been justified in the case of the R.E.8, which was criticised on its introduction, but is now in much request by Artillery squadrons.

MR. BILLING: With reference to the R.E.8, is the hon. gentleman aware of the reply he gave recently that certain pilots in the Royal Flying Corps refused to fly this type of machine, and that the number is increasing; I understand that Captain Ball refused to fly this type of machine; and under these circumstances will he consider the advisability of having an enquiry into the R.E.8?

Major Baird: No, sir; there is absolutely no need for an enquiry. The R.E.8 machine is being supplied, and directly officers get it they are delighted with it, and we are sending out this machine as fast as we can.

MR. BILLING: Is any action taken against those pilots who refuse to fly?

MR. BILLING asked whether a civilian aviator, Mr. Roland Ding, recently killed in Yorkshire by the breaking of his machine in the air, was flying a B.E. biplane or an aeroplane of Government design; if it was a B.E. biplane or other machine of Government design; whether it was fitted with an engine of a higher power than the machine was originally designed to carry; whether the B.E. biplane was originally designed for a 100 horse-power engine; whether it was first sent on active service with only a 70 horse-power engine; whether it is still sent on active service with only a 90 horse-power engine; whether it has been found to be safe to fly with an engine of 150 horse-power; whether such power is being fitted to this type in order to attain a reputation for Government official design; and whether, in view of the recent fatality occasioned by this, he will now cause this practice to be discontinued?

Major Baird: The aviator referred to was in the private employment of a firm of aeroplane constructors, but I understand that he was flying a B.E.2 machine with a 90 horse-power R.A.F. engine, which is the type for which it was originally designed. The answer to the fourth, fifth, and sixth parts of the question is in the affirmative, and to the seventh part in the negative. The last part of the question, therefore, does not arise.

### Enemy Outrages and Reprisals.

MR. BILLING, on May 23rd, asked the Prime Minister whether he will state the reasons for the reluctance shown by the authorities to initiate air raids as a reprisal for the sinking of hospital ships and other enemy outrages?

MR. BONAR LAW: I have no statement to make on the subject.

MR. BILLING: Have we not put ourselves in a humiliating position by adopting a great principle and then on a question of expediency—

MR. SPEAKER: That seems to be a matter for argument.

### Civil Aerial Transport Committee.

MR. BILLING asked the Prime Minister when it is proposed that the new Committee for considering the development of our air policy after the War shall have its first sitting; and whether its proceedings will be in secret, or if it is proposed to lay any of its recommendations upon the Table?

The Parliamentary Secretary to the Air Board (Major Baird): The proceedings of the Civil Aerial Transport Committee, which will meet immediately after Whitsuntide, will be, in any case for the present, entirely confidential. Until the nature of the Committee's recommendation is known it is not possible to answer the last part of the hon. member's question.

### Air Services—Captain Ball.

COLONEL LORD HENRY CAVENDISH-BENTINCK, on May 25th, asked the Under-Secretary of State for War whether Capt. Ball refused to fly a R.E. 8 machine?

Major Baird: I am much obliged to my Noble Friend for affording me this opportunity of giving the most explicit denial to an allegation which is entirely without truth.

### United States and British Aeroplanes.

MR. BILLING, on May 24th, asked the Prime Minister whether the Government is prepared to loan or sell to the American Government one or more of the latest types of our aeroplanes for the purpose of facilitating and speeding up the production of a great fleet by our American Allies?

The Parliamentary Secretary to the Air Board (Major Baird): I have been asked to answer this question. It would not, I think, be desirable to give any detailed information in regard to measures of co-operation in aeronautical matters between this country and the United States, but the hon. Member may rest assured that the question is one on which the two Governments are in close consultation.

MR. BILLING: This is again a question of policy—whether the right hon. Gentleman the Leader of the House does not think that the loaning of one or two of our best machines and of our best men to the American Government at the present minute would do more to win the War than all the Debates in this House since August, 1914?

MR. BONAR LAW: Obviously the policy of the Government is to co-operate in every possible way with the Government of the United States. The details of the co-operation must be a question for the Departments concerned.

MR. BILLING: Is the right hon. Gentleman aware that at the present moment we have absolutely declined to lend the Americans one machine?

Major Baird: That is absolutely untrue.



## ONE HUNDRED AEROPLANES FROM OVERSEAS.

THE outstanding event at the eleventh annual meeting of the Overseas Club on Empire Day, May 24th, was the presentation by Mr. Walter Long, Secretary for the Colonies, to Lieut.-General Sir David Henderson, K.C.B., D.S.O., of a cheque for the purchase of the 99th and 100th aeroplanes given by members of the Club overseas to the Royal Flying Corps.

Lord Northcliffe, who presided, read the following messages:

From Lord Stamfordham.—“I feel sure His Majesty will be interested and gratified to know that on Empire Day the Overseas Club will hand over to the Royal Flying Corps a cheque to pay for the purchase of the 100th aeroplane subscribed for by British subjects overseas.”

From Sir Henry Streatfeild.—“I have submitted to Queen Alexandra your letter of yesterday's date, and am desired by Her Majesty to say how interested she is to hear that on Empire Day the Overseas Club is to hand over to the R.F.C. a cheque to purchase your 100th aeroplane. Her Majesty has a very pleasant recollection of her visit to Aldershot in July, 1915, when she named several aeroplanes presented by the Overseas Club to the Government, and congratulates you very cordially on the progress which has been made.”

From Lord Derby.—“You tell me that you have already presented 99 aeroplanes to the R.F.C., and I feel quite sure that, with the energy and generosity which characterise your club, before this letter is read the money for the 100th will have been found. This is a feat on which the members of the club may well congratulate themselves, and it is one for which I desire, on behalf of the War Office, to express the most sincere thanks. But, if I may say so, it is not only for the material gift that I thank you, but for the interest that your club has taken in aircraft. Aviation is only in its infancy, and the more minds that can be brought to bear on its improvement, and the more public interest is aroused in its advancement, the better it will be for this country, not only in war but in peace.”

“I mention its utility in peace because I believe in the commercial possibility of aircraft in the future, and I am delighted to think that your Chairman, Lord Northcliffe, has been appointed Chairman of a Committee to consider to what commercial use it can be put. Lord Northcliffe's interest in aeronautics from its very beginning has had much to do with its present development, and I feel certain that his Committee, aided, as I am sure it will be, by the Aero Club, will give excellent advice in regard to the peace use of flying machines. Again I thank you for having given me this opportunity of testifying to the gratitude felt by the Army Council for the great generosity of the Overseas Club.”

In moving the adoption of the report, Lord Northcliffe said the Club's aircraft fund now amounted to more than £150,000.

Mr. Bulkeley-Evans, Chairman of the Central Committee, in asking Mr. Walter Long to present to Sir David Henderson, Director-General of Military Aeronautics, a cheque for £3,000 representing the purchase money of the 99th and 100th aeroplanes subscribed for by members of the Club as gifts to the R.F.C., said that Number 99 was the gift of the Aborigines Rights Protection Society of the Gold Coast, and the machine would be named “Gold Coast Aborigines, No. 2.” The 100th machine was the gift of the Government of British Guiana, and would be named “British Guiana, No. 2.” He added that information had been received that another machine was to be given by Mr. Walter Greenacre, of Durban, and yet another by the Shanghai Race Club, the fourth machine from this source. This brought the total number of machines subscribed for up to the present date to 102.

Mr. Walter Long, after paying a tribute to Lord Northcliffe for founding the Club, said: “May I say how proud I am to be permitted, at the request of your president and your committee, to hand to my friend, Sir David Henderson, a cheque to which reference has been made. I should like to take this opportunity to say in Sir David's presence that I know from personal experience how incessant and untiring have been his efforts in connection with our Army Air Service.”

“I also know from information I have had within the last

few days, from men who have come from the other side, how efficient and how wonderfully successful have been our airmen and their machines, and how magnificent has been the work that they have done for the Empire. Nobody can measure to-day, nor will anybody be able to do so until the war is over, what services these men have rendered in giving their lives by saving the lives of countless other men. Their work has been heroic, and I am very glad that it falls to my lot, not only to bear this testimony in the presence of Sir David Henderson, but to convey to him your generous gifts.”

“Sir David, like myself, belongs to a Government organisation. He and I have long ago realised that when you enter the doors of a public office in this country you will, if you are wise, make up your minds at once to two inevitable consequences. One is that you will never succeed in doing anything right—because if you are right somebody else will claim that he originated the idea—and the second is that whoever may be pleased with what goes on there are sure to be a larger number of people who are displeased. A very modest sum will buy a ‘Whitaker's Almanack,’ and sufficient industry will enable them to find within its pages who are the people who are paid to discharge certain duties in our public offices. Having discovered that, they say it is the inalienable right of a British citizen to find fault with the man who is paid to do a job which manifestly, in their judgment, he does so inefficiently. Therefore, Sir David Henderson and I accept with due humility, and I hope with a full desire to take advantage of it, the correction we receive.”

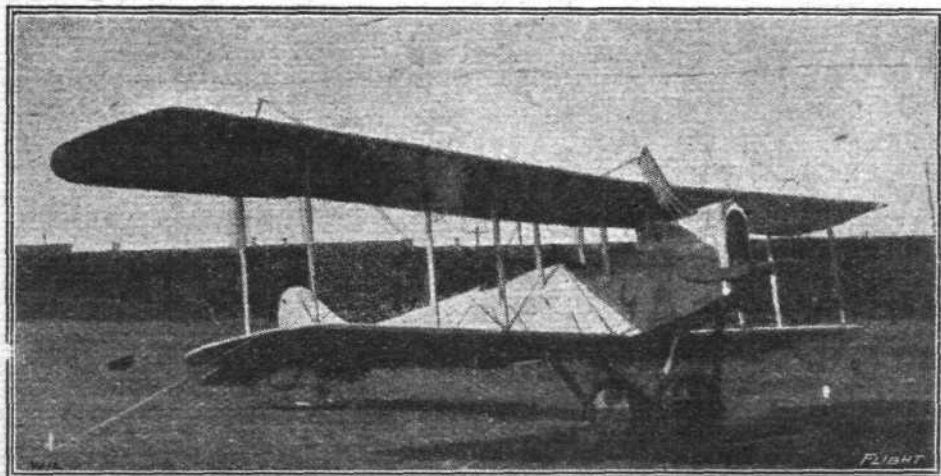
Sir David Henderson, in accepting the cheque, said the gift of 100 aeroplanes did not exhaust what had been done by the Overseas Dominions for the R.F.C. Contributions to purchase aeroplanes had been received from overseas in addition to those given by the Club, while generous contributions had also been received by the R.F.C. Hospital.

“With regard to these two particular aeroplanes,” he continued, “I can give you now an assurance which I could not have given before, and that is that whatever kind of aeroplane you wish to be purchased with this money, whether fighting machines or reconnaissance aeroplanes or artillery aeroplanes or training machines, thanks to the Air Board you can now get the best of the kind. I have had to carry a heavy burden for five years in trying to get sufficient of the best kind of aeroplanes for our Royal Flying Corps. It has been a very difficult task. Now, thank God, we are likely to get them, not from me, but from the better men who have now got it in hand. I must also thank Mr. W. Long for what he has said about the R.F.C. It is a very fine body, and is doing its work as well as anybody could do it. Our men are as gallant and fine a lot of young men as you will find in any army in the world. I wish to thank you very much for this contribution. We will try to make the very best use of it.”

■ ■ ■ ■

### Russian Air Raids.

RUSSIAN seaplanes have attacked Constanza and Braila. At Constanza some ships in the harbour were sunk and several explosions and fires caused, while at Braila three depôts were destroyed, two reservoirs of naphtha set on fire, and fires caused on two laden sailing vessels.



The Wittemann-Lewis 90 h.p. model T.T. tractor biplane, built at Newark, N.J., U.S.A. Note the deep cowling totally enclosing the engine.



## "X" AIRCRAFT RAIDS.

### "X 60" Raid (May 23rd-24th).

THE following report was issued on May 24th by Lord French, Commanding the Home Forces:—

"Four or five hostile airships approached the coast of East Anglia shortly before midnight last night. The weather was overcast and a thick bank of raidcloud made observation difficult. Four airships appear to have penetrated inland into the Eastern Counties. They followed erratic courses and dropped a number of bombs in country districts, apparently being unable to locate their positions. The raiders were pursued by our aeroplanes, but the thick clouds enabled them to make good their escape. One man was killed in a Norfolk village. The material damage is believed to be negligible."

#### German Version.

"One of our naval air squadrons, under the command of Capt. Corvette Strasser, on the night of May 23rd-24th successfully attacked the fortified places of Southern England—London, Sheerness, Harwich and Norwich.

"In spite of the improved enemy defence measures, all our airships returned without loss or damage."

### "X 61" Raid (May 25th).

THE following *communiqué* was issued by the Field-Marshal Commanding-in-Chief, Home Forces, at 12.45 p.m. on Saturday:—

"A large squadron of enemy aircraft, about 16 in number, attacked the South-East of England between 5.15 and 6.30 p.m. last night. Bombs were dropped at a number of places, but nearly all the damage occurred in one town, where some of the bombs fell into the streets, causing considerable casualties among the civil population. Some shops and houses were also seriously damaged. The total casualties reported by the police from all districts are: Killed, 76; injured, 174. Of the killed, 27 were women and 23 children, while 43 women and 19 children were injured. Aeroplanes of the Royal Flying Corps went up in pursuit, and the raiding aircraft were engaged by fighting squadrons of the R.N.A.S. from Dunkirk on their return journey. The Admiralty report that three of the enemy aeroplanes were shot down by the latter."

The following announcement was issued by the Secretary of the Admiralty:—

"Naval aeroplanes carried out an attack on the aerodrome at St. Denis Westram, near Bruges, yesterday morning. Many bombs were dropped. In the evening several enemy aircraft returning from a raid on England were engaged oversea by R.N.A.S. machines. An encounter took place between one British and three hostile aeroplanes in mid-channel, and one of the latter was destroyed. Several encounters also took place off the Belgian coast, in which two large twin-engined hostile machines were shot down. All our machines returned safely."

#### German Version.

"During the course of a successful raid one of our air

squadrons dropped bombs on Dover and Folkestone, on the south coast of England. Long-distance flights inland also gave good results."

### Inquest on Raid Victims at Folkestone.

SINCE the above *communiqués* were issued it has been announced that Folkestone was the place where the casualties were heaviest. Messages of sympathy with the families of those killed and injured have been received from the King and Queen Alexandra.

At the inquest at Folkestone on 33 victims of the raid, of whom there were 63 in the town, the Coroner paid a tribute to the conduct of the townspeople. The enquiry was largely taken up with a discussion as to the absence of any warning of an impending raid.

The jury, after consultation in private, returned a verdict "that the deceased persons met their deaths by injuries received through bombs from hostile aircraft, Great Britain being in a state of war and the victims being at the time non-combatants."

A rider was added regretting that the competent authorities did not give notice of the approach of aircraft, and stating that the jury were also strongly of opinion that in future the town should be warned by sirens or some other device.

The Chief Constable stated that the Watch Committee would consider the question of providing a siren.

In each of the 33 cases enquired into a similar verdict was returned. Nearly all were women and children, two being widows, one 80 years of age and the other 72.

The enquiry was further adjourned.

### A Public Meeting at Folkestone.

At a crowded meeting on May 29th it was resolved that "The residents of the borough of Folkestone demand that the Government be asked immediately to hold an enquiry into the air raid on Friday last, May 25th, and to take such steps as will prevent further attacks of a similar nature and the wholesale murder of women and children of the town."

Councillor Forsyth, who presided, asked how it was possible for a large number of hostile aircraft to attack the town in broad daylight, inflicting appalling loss of life and damage to property, and, if the military authorities had knowledge of an impending attack, why no warning was given, so that people could have returned home and taken cover. He stated that certain enemy aliens in the town had been sent away in the course of 24 or 48 hours, so that there would be no risk of further complaint on this score.

Councillor King Turner proposed "That this meeting demands that a grant should be made by the Government to the local authorities, so that full and adequate financial assistance can be given to all the needy sufferers from the raid." This was seconded by Mr. Sanders, representative of the Trades Council, and was carried unanimously.

## PERSONALS.

### Casualties.

Second Lieutenant CEDRIC L. GUNNERY, R.F.C. (killed in action on May 22nd), was elder son of Mr. and Mrs. L. H. Gunnery, of Glengarry, Thames Ditton. He had his commission in August, 1916, and was gazetted flying officer in January of this year.

Second Lieutenant E. W. LINDLEY, Manchester Regiment, attached R.F.C. (reported missing on February 16th, now reported died in German Field Hospital in France), was younger son of Mr. and Mrs. E. T. Lindley, of Vambury, Norbury. He was 20 years of age, and had his commission in the Manchester Regiment in July, 1915, being gazetted flying officer in January, 1917.

Captain GERALD DESMOND MILLS, Sherwood Foresters, Major and Squadron Commander, R.F.C. (killed on May 19th at the front as the result of an aeroplane accident), was 26 years of age, the youngest son of Canon Mills, Bennington Rectory, Stevenage. He had his commission in the Sherwood Foresters in October, 1910, and entered the R.F.C. in October, 1914. In March of last year he was gazetted Squadron Commander, and in the following July he was appointed Officer Commanding the Testing Squadron.

Captain JOHN W. TAILFORD, Border Regiment and R.F.C., who was killed while flying on May 21st, was the only son

of Mrs. Tailford, of 35, York Place, Baker Street, N.W., and was a civil engineer. On the outbreak of war he received a commission in the Border Regiment. He had been mentioned in despatches for conspicuous bravery in the field, and had been awarded the Military Cross. Subsequently he joined the R.F.C. He was aged 24, and leaves a widow and one boy.

Second Lieutenant PERCY WARD, R.F.C., who is reported killed in action, was the son of Mr. Harry Ward, of Waltham. The young officer joined the Army early in the war as a private. Recently he received his commission, and had been at the front six weeks.

Captain J. F. ST. JOHN ANNESLEY, M.D., Royal Army Medical Corps, whose death occurred on Saturday, the 19th inst., whilst flying in a biplane, was a son of Rev. J. B. Annesley, B.A., formerly rector of Drumkeeran, near Kesh, County Formanagh.

### Married and to be Married.

The marriage of Captain ROBERT HENRY HAWKINS, South Staffordshire Regiment, attached R.F.C., son of the Rev. F. H. A. Hawkins, to MARGARET, eldest daughter of the Rev. T. A. LACEY, will take place at All Saints', Highgate, on June 4th, at 11.



## THE ROLL OF HONOUR.

## Reported by the Admiralty:—

**Killed.**

Flight Sub-Lieut. J. D. Haig, R.N.  
Sub-Lieut. G. Keightley, R.N.V.R.

**Accidentally Killed.**

Lieut. P. T. Armstrong, R.N.V.R.  
Flight Sub-Lieut. J. T. Sims, R.N.

**Missing, believed Killed.**

Flight Sub-Lieut. H. D. Smith, R.N.

**Wounded.**

Lieut. G. E. M. Burnside, R.M.  
Flight Sub-Lieut. F. V. Hall, R.N.  
Flight Sub-Lieut. C. E. Pattison, R.N.  
Flight-Lieut. B. P. H. de Roeper, R.N.

**Missing.**

Sub-Lieut. L. J. Bennett, R.N.V.R.  
Flight Sub-Lieut. G. G. Bowman, R.N.  
Flight Sub-Lieut. O. B. Ellis, R.N.  
Flight-Lieut. C. Laurence, R.N.  
Flight Sub-Lieut. H. M. Morris, R.N.  
Flight-Lieut. H. A. Pailthorpe, R.N.  
Flight Sub-Lieut. H. L. Smith, R.N.

**Injured.**

Sub-Lieut. C. S. Fox, R.N.V.R.  
Flight-Lieut. E. P. Hardman, R.N.

**Accidentally Injured.**

Flight Sub-Lieut. G. C. B. Cotterell, R.N.  
Flight Sub-Lieut. C. B. de T. Drummond, R.N.  
Flight Sub-Lieut. C. S. Nunn, R.N.  
Proby. Flight Officer H. T. Pepper, R.N.  
Proby. Flight Officer H. W. Yates, R.N.

## Reported by the War Office:—

**Killed.**

2nd Lieut. M. S. Goodban, E. Surrey, attd. R.F.C.  
Capt. W. T. Hall, R.F.C.  
2nd Lieut. F. D. Holm, R.E. and R.F.C.  
2nd Lieut. E. S. Howard, R.E., attd. R.F.C.  
Lieut. E. J. McCormick, R. Innis. Fus., attd. R.F.C.  
Lieut. A. G. Mackay, Quebec, attd. R.F.C.  
2nd Lieut. V. F. Stewart, Durham L.I., attd. R.F.C.  
2nd Lieut. B. Strachan, R.F.C.  
2nd Lieut. J. G. Troup, Cameronians (Sco. Rif.), attd. R.F.C.  
2nd Lieut. P. H. B. Ward, R.F.C.  
43682 2nd Air Mech. T. Aspinall, R.F.C.  
239 Sergt. W. J. Burtenshaw, R.F.C.

**Died of Wounds.**

Major G. D. Mills, Sher. For. and R.F.C.  
2nd Lieut. H. G. Neville, R.F.C.  
2nd Lieut. C. F. Reeve, R.F.C.  
Lieut. J. H. Ryan, R.F.C.  
Lieut. J. Senior, R.F.C.

**Accidentally Killed.**

2nd Lieut. S. H. Dennett, Shropshire L.I., attd. R.F.C.

**Died.**

Lieut. A. Drey, M.C., A.S.C., attd. R.F.C.

**Previously reported Missing, now reported Killed.**

2nd Lieut. M. Allport, R.F.C.  
Capt. E. W. Bowyer-Bower, E. Surrey, attd. R.F.C.  
2nd Lieut. G. Clayton, W. Yorks., attd. R.F.C.  
2nd Lieut. E. Elgey, R.F.A. and R.F.C.  
2nd Lieut. J. H. Gale, R.F.C.  
2nd Lieut. F. L. Kitchin, Glouc., attd. R.F.C.  
Lieut. O. R. Knight, R. W. Surrey and R.F.C.  
2nd Lieut. G. B. Samuels, Durham L.I., attd. R.F.C.  
2nd Lieut. V. H. Sequin, R.F.C.

**Previously reported Missing, now reported Died as Prisoner of War in Turkish hands.**

5848 2nd Air Mech. W. Keefe, R.F.C.

**Wounded.**

2nd Lieut. W. P. MacD. Brettell, R.F.C.  
2nd Lieut. J. De Conway, Yeo. and R.F.C.  
Lieut. H. J. Duncan, M.C., R.F.C.  
2nd Lieut. R. L. Hall, R.F.C.  
2nd Lieut. W. O. Hatcher, Cam. (Sco. Rif.), attd. R.F.C.  
2nd Lieut. G. C. Heseltine, R.F.C.  
2nd Lieut. H. W. Ingram, R.F.C.  
Capt. N. Senior, Duke of Wellington's and R.F.C.  
2nd Lieut. M. E. Stutchfield, R.F.A., attd. R.F.C.  
2nd Lieut. J. V. Tunbridge, Australian F.C.  
2nd Lieut. W. Wallace, R.F.C.  
2nd Lieut. E. E. S. Wheatley, R.G.A., attd. R.F.C.

**Previously reported Prisoners of War, now reported Wounded and Prisoners of War in German hands.**

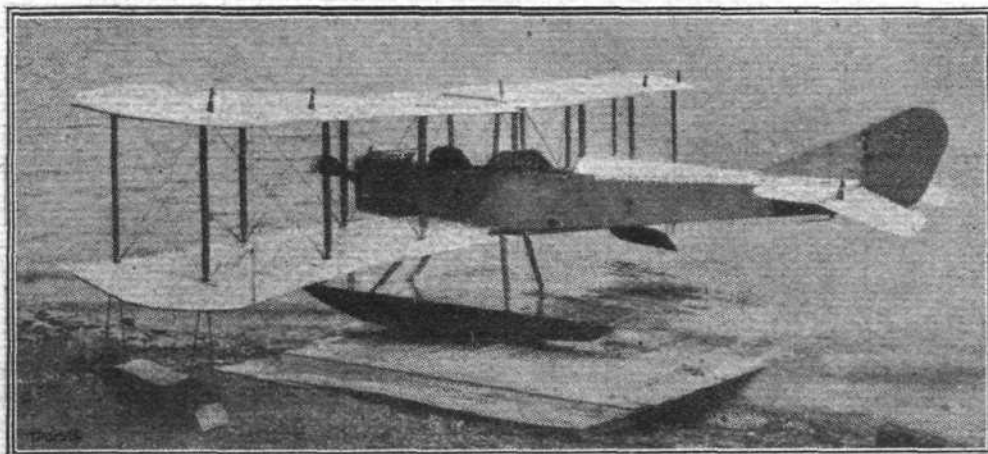
2nd Lieut. C. D. Bennett, R.F.C.  
Lieut. C. B. Bird, M.C., R.F.A., attd. R.F.C.  
2nd Lieut. F. Matthews, R.F.C.

**Missing.**

2nd Lieut. S. F. Allabarton, R.F.C.  
2nd Lieut. M. G. Cole, R.F.C.  
Capt. W. G. S. Curphey, M.C., R.F.C.  
Lieut. L. Drummond, Can. Eng., attd. R.F.C.  
2nd Lieut. R. J. Grandin, A.S.C., attd. R.F.C.  
2nd Lieut. J. D. V. Holmes, R.F.C.  
2nd Lieut. T. H. Lines, R.F.C.  
2nd Lieut. G. B. Miller, Highland L.I., attd. R.F.C.  
Lieut. A. B. Raymond, A.S.C., attd. R.F.C.  
Lieut. J. R. Robertson, Yeomanry and R.F.C.  
2nd Lieut. A. M. Sutherland, N'land. F., attd. R.F.C.

**Previously reported Missing, now reported Prisoners of War in German hands.**

Lieut. A. T. Adams, Wiltshire, attd. R.F.C.  
2nd Lieut. C. R. Dougall, Arg. & Suth. Hdrs. and R.F.C.  
2nd Lieut. F. A. W. Handley, R.E., attd. R.F.C.  
2nd Lieut. N. L. Knight, R.F.C.  
2nd Lieut. A. C. Pepper, R.F.C.  
2nd Lieut. E. Percival, Norfolk, attd. R.F.C.  
Capt. W. L. Robinson, V.C., Worcs., attd. R.F.C.  
2nd Lieut. L. A. T. Strange, Buffs (E. Kent) and R.F.C.  
2nd Lieut. C. P. Thornton, King's (L'pool), attd. R.F.C.  
Lieut. E. J. D. Townsend, R.F.C., attd. R.F.C.  
2nd Lieut. P. E. H. Van Baerle, W. Yorks and R.F.C.  
2nd Lieut. E. D. Warburton, R.F.C.



The Thomas (U.S.A.) model SH-4 tractor seaplane, designed mainly for training purposes.

**Aeroplanes from Gambia.**

TEN thousand pounds has been given by Gambia for aeroplanes for the R.F.C. The aeroplanes will be named after the colony.

**Triplanes in Aerial Fights.**

Writing to the *Daily Mail* on Sunday last from France, Mr. W. Beach Thomas says:—

"Long-range, high-velocity shells had been scraping the roofs in Arras, and the enemy's aircraft, probably reinforced from the eastern front, were for the first time dropping bombs within the area of the battle. But they were soon chased back, and our fighting triplanes have never more audaciously challenged battle."

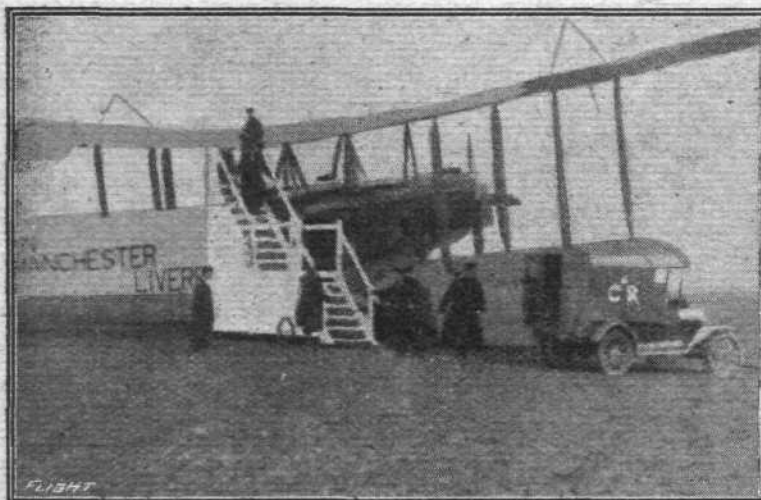


# "COMMERCIAL AERONAUTICS."\*

By G. HOLT THOMAS.

THE subject I have to deal with in this paper is enormous, and of vital importance to the Empire, but it is only possible to touch very lightly on the possibilities of commercial aeronautics in the time allowed this evening. My opinion is that it will revolutionise the world not only from a commercial point of view, but from a humanitarian point, much more indeed than it has revolutionised warfare, although the effect on that is very great. Civil, as opposed to military, aviation in pre-war days has simply meant civilian pilots acting professionally or for sporting purposes, but civil aviation after the war will certainly be of quite a different character and with objects of very much greater importance. I am not one of those who think that commercial aeronautics are going to beat railways and other forms of transport out of existence, but rather that flying will act as an adjunct to the present modes of transport. The question which we have to decide to-night is: "Can the aeroplane, taking into account the advantages of speed, &c., which it alone possesses, be regarded as a practical means of transport?" I wish to make it quite clear that I in no way intend to deal with the type of aircraft to be used for commercial purposes, but simply to deal with these uses as I foresee them in the near future. Again, I am only, for commercial purposes, going to talk about aeroplanes. The lighter-than-air machines have their uses, but the cost is, I think, too great to bring them in for commercial purposes, at any rate at the moment

put under its very nose more than Great Britain. The first great meeting after Rheims was held at Blackpool. In 1909 I brought Paulhan to London. In 1910 the first great town-to-town flight in the world, London-Manchester, for which a prize of £10,000 was given by the *Daily Mail*, took place, and nothing in my very full life gave me greater pleasure than organising it. The Circuit of Britain was an event which ought to have convinced anyone. The airmen in the Circuit of Europe, in which I acted for this country, after passing through France, Holland and Belgium, arrived in London to meet more police than public. The first flight on Salisbury Plain, which I arranged with the late Captain Dickson, at the Military Manœuvres in 1910, would have convinced anyone but a Britisher. But luckily, like Britishers always do, we got there in the end. Now this is all ancient history, but why I refer to it is because our want of initiative was due to public apathy and apathy on the part of business men. No country depends more on public opinion than our own. It can carry anything, and our dilatory methods in military aviation are entirely due to public apathy. The fact that a handful of machines crossed the Channel on the outbreak of war is not due to the Flying Corps. No keener body of men existed, but up to the outbreak of war they were starved. It is a wonder their enthusiasm was not entirely quenched. It was not due entirely to the War Office or the Cabinet, who, I again affirm, could



**PREPARING FOR AFTER THE WAR.**—A couple of photographs from the film which illustrated Mr. Holt Thomas's remarkable lecture on Commercial Aeronautics on Wednesday before the Aeronautical Society. On the left: Loading up. On the right: Distribution of mail and aerial post. In full flight. Note.—These photographs are from actual full-sized machines in operation.

(although I speak as one interested in airships as well as aeroplanes), and their speed is not sufficient. It is, however, certain that we must be first in airships, as in everything else, in this country, and airship services subsidised by the Government to a very large extent will undoubtedly be the course so far as lighter-than-air machines are concerned.

A great compliment has been paid to the Aeronautical Society and myself this evening inasmuch as we have as Chairman Lord Cowdray, the President of the Air Board, and personally I am quite as pleased to have him as my Chairman in his unofficial position, viz., as one of the most eminent business men of this country, for this reason. The successful use of aircraft for commercial purposes will depend on the views of business men, and no one is more capable than our Chairman to-night to decide whether there is a commercial use for aircraft or not, whether aerial services will constitute a financial success or not, and generally to decide whether I am talking common sense to you this evening or whether I am to be regarded, as I have been for so long, as simply an enthusiast. In my opinion there exists no doubt at all on the matter, no more doubt that has been the case for the use of aircraft for military purposes, now proved up to the hilt; and as I was a true prophet on military uses, I would ask you to have some confidence in my statement as to commercial uses.

The history of aviation in this country is lamentable, but glorious. No country has had the practical results of flying

do very little without public opinion behind them. The glorious record of the Flying Corps, notwithstanding their infinitesimal beginning, is now known to us all. The importance of military aeronautics is now known to us all, but nobody can say how we might have changed this war if we had taken it in time. To-night I am speaking in exactly the same strain on *commercial* aeronautics as I spoke seven years ago on *military* aeronautics, and I assert without the slightest fear that I am speaking on as large a subject, and one of just as vital importance to the Empire. But we must not let history recur. We *must* be first. No one will be quicker than the Huns to recognise the importance of this, the latest form of transport, but *this time we must be the leaders*. As British military aviation has shown, we have the men, second to none; we have the designs, and I am addressing you to-night to ask you to give the public support, the energy, the finance and the encouragement which must be behind a movement of the kind if it is to succeed. It is a world-movement, and we *must* lead.

Another point is the fact that Lord Cowdray has recently appointed a Committee, with North Northcliffe, who has always taken such a keen interest in the subject, as Chairman, to advise on the uses and development of commercial aircraft. This Committee should be one of enormous importance, as although I shall touch to-night on a few evident uses of aviation for commercial purposes, frankly I think they are illimitable. The aeroplane is mobile. It can move from one route to another at will, and always at enormous speed compared with other forms of transit. It is going to open

\* A Paper read before the Aeronautical Society of Great Britain on May 30th, 1917.



up the world as no other means of transport has yet done, and I look to Lord Northcliffe, whose enterprise and energy we know, to so guide his Committee that a start at any rate will be made quickly and on the right lines. Only a few days ago General Smuts said in a speech:—

"Our Empire, peculiarly situated, scattered over the whole world, was dependent for its very existence on world-wide communications which must be maintained, or that Empire would go to pieces."

In reading a paper on "The Commercial Use of Aircraft in the Future," I am placed in a somewhat awkward position, as I have spent a good many hours explaining to the gentleman at the Ministry of Munitions who is responsible for the taxation of aircraft accounts that there is no future whatever for aircraft after the war; and this evening I am here to prove exactly the opposite. The position, however, is not so awkward as it might appear, as this paper is largely an effort of imagination, and the ideas which I have to put before you would be quite impossible to carry out unless the accounts of the aircraft companies are very liberally treated as regards their so-called profits during the war and subsidies for aerial services after the war. I say "so-called profits" as the capital expenditure since the war in the case of aircraft companies has been so huge, and of such an extraordinary nature; their pre-war standard is so absurd compared with other industries that taxation can with the greatest ease entirely prevent any schemes for the use of aircraft after the

be done, I think I may safely say that all that is asked for is encouragement on business lines in the form of money paid for services rendered. But there are many doubters even in the aircraft world. Fog is mentioned, weather is referred to, and many objections raised. Several friends have said we cannot compete with trains and lorries and other forms of transport, and that we cannot carry heavy weights. One man said we could not transport a motor car, for instance, and so on. Now all these doubters, even if they were right, in my opinion have not altered the case one jot. They have simply done what the Army Council did when, years ago, I used to attack them daily—they have simply advanced arguments as to what aircraft will *not* do, ignoring what it *will* do. One might as well say nowadays a motor car is no use for commercial purposes because it cannot fly. At the same time I may say that if anyone wants it it is perfectly easy to produce an aeroplane which will transport a motor car with ease, and several machines are in existence to-day which will do it, so far as weight is concerned. Fog, for instance, is a drawback, but it holds up trains, motor cars, and ships. If bad enough, it stops the whole of the street traffic of this Metropolis, and personally in this new science of flying and new method of transport I would far rather accept the argument that we shall have, sooner or later, fog-penetrating searchlights on our machines, or other devices, than that fog will prevent the use of commercial aircraft. Because we *can't* do what a train or motor car can is no argument whatever in my opinion.

The whole and only point in my case for commercial aircraft is that we *can go faster* and within certain limits carry a given weight faster than any other form of transport.

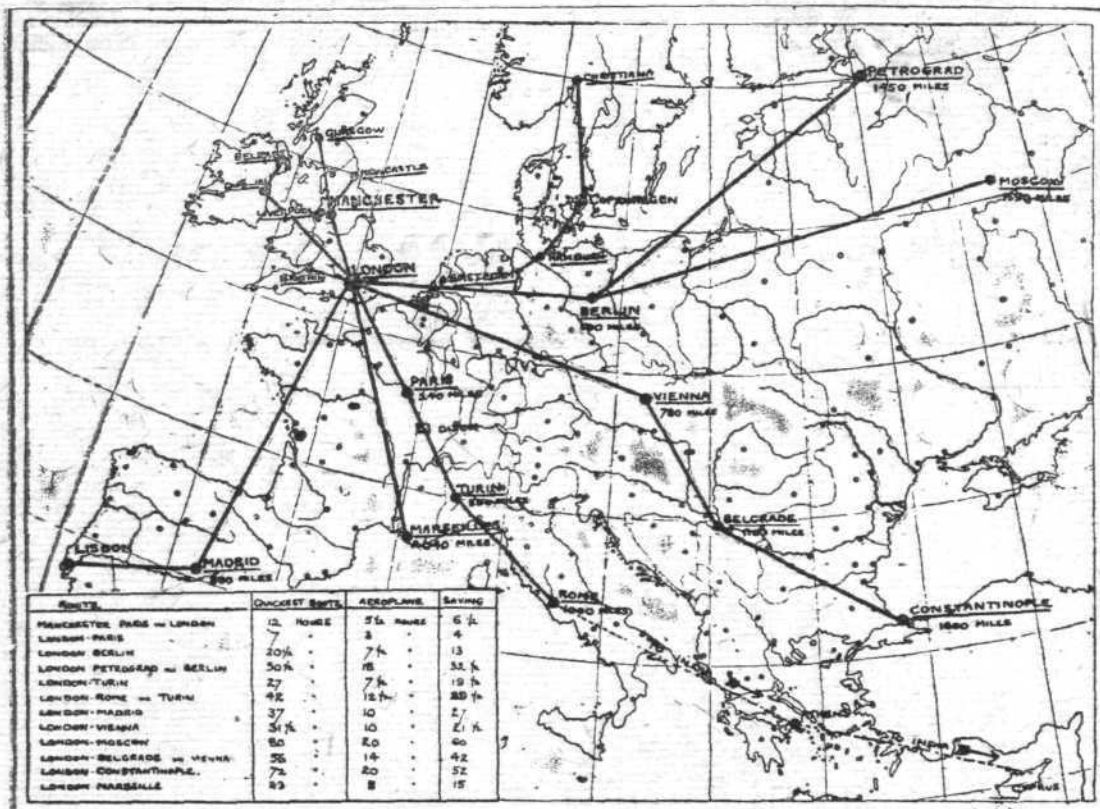


Fig. 1.

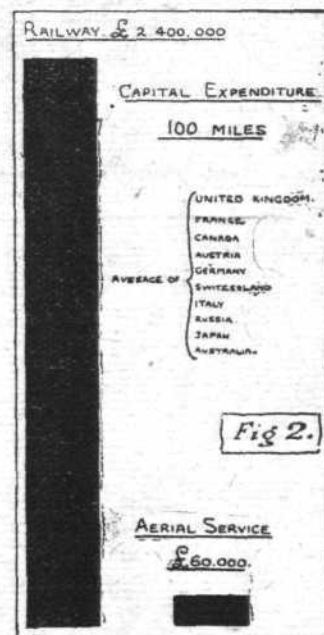


Fig. 2.

war by leaving no funds for development. To carry out commercial schemes very large expenditure will be required, and this is naturally impossible unless there are funds to draw on. For commercial aircraft new types of machines will have to be devised and new problems will have to be faced.

But there is another problem for the Government in addition, viz., the question of Government subsidies for mail and passenger services. The British Mercantile Marine has been assisted in the past by subsidy, and I fail to see why the British Commercial Air Services should not come under the same category. We know during the war how important the Mercantile Marine has been, and the Commercial Air Services, if they had been in existence and properly developed, would have been equally important, and certainly will be in the future. You can decide what we could do to-day if we had a real surplus of aircraft and pilots as well as I can. You can decide what effect on the war at the beginning we could have had with a large aerial fleet. Aviation has suffered in the past from mere discouragement, and the people in this country must see that in the future not only is it not discouraged, but on the contrary that it is very fully encouraged.

One way of encouragement is a subsidy for passenger and mail services, and although I cannot say exactly how this could

The question naturally arises as to in what way will aircraft be used commercially after the war. As I have said for nearly ten years, to prophesy for such a new science as flying is almost impossible, but many instances will crop up for the use of commercial aeroplanes, of which I may give you a few.

Surveying, for instance. I am told by my friends amongst the large contractors that it would be worth an enormous sum to be in a position not to know where to go, but to know where *not* to go; and the production of some sort of cinematograph machine for the purpose has already been tried and certainly will be produced.

For those in a hurry. Nothing can compete with the aeroplane for those on special services in need of the greatest speed possible. This alone opens a very wide field indeed.

From a business point of view it must be remembered that speed is everything. One saw this in pre-war days in the competition between the steamship companies in the race across the Atlantic. A special aeroplane, i.e., special used in the sense of special train, which is perfectly feasible to-day, will enable the business man to leave London in the morning, do his business in Paris and be home again in dinner. It will take him to Baghdad in a day and a half, or New York



in two days. Many business men would smile at the idea of using this mode of conveyance to-day, but the only thing is to remind them that they also smiled in the early days of motor cars, and yet half the business to-day would take double the time to do if the motor car were not in existence. There again many special openings will occur, and I will give you one which I discussed before the war with the Editor of the *Daily Mirror*, viz., as to whether we should not keep a machine and pilot always at their disposal, in order that in the case of any such event as a big railway accident or any event of great public interest their representative should be on the spot as soon as possible, and, of course, ahead of any other paper. A parson in a far-off Colony has already proposed to use a seaplane to fly round the coast, across bays, &c., and so visit his parish in hours instead of months of tedious travel. Rivers again suggest a very probable and certainly useful employment of aeronautics, using then as a line of flight. Huge districts in many localities, such as Africa, are controlled by officials who usually employ the river as a means of transit, using motor launches, and then inland from the nearest point. Think of replacing this by the use of seaplanes doing 100 miles an hour. This equally applies to mails. South America, Canada, Asia, all come into this scheme, and no landing ground is required. Nature has supplied it in the form of a smooth-surfaced river. Again, these ready-made roads could be followed at night with a searchlight on the machine with the greatest ease and no danger. The Cape to Cairo Railway again affords simply an instance which occurs over and over again in that and other countries, where an aerial service might be employed as an adjunct to the railway. The present method would probably be one's arrival at a wayside station, and then, say, 50 miles in a bullock wagon, or perhaps walking, over jolty roads, or no roads at all, taking one or several days. Compare this with stepping into an aeroplane and arriving in half an hour. Certainly the development of all the Overseas Dominions will be largely affected by flying.

In this paper, however, I propose to deal with what I am sure most of you have in your minds, although there are certainly other uses, viz., the conveyance of passengers, mails, and goods to all parts of the world at a speed beyond anything yet attempted. Now I might be asked why I have confidence in such a means of conveyance and in its success as a commercial proposition. The reasons are these: Firstly, that it is faster than any other means of transport; secondly, that I consider it safe; thirdly, that it is not too costly to provide a commercial proposition. The first claim which I make for the use of aircraft after the war is the fact that it is the fastest form of transport in the world. We have to-day practical machines which will do well over 100 miles an hour, indeed far higher speeds, and by practical machines I mean a machine which has high speed, low landing speed, and weight-carrying capacity, going from point to point as the crow flies, and no other mode of transit can do this. And I think our Chairman will agree with me when I say that any means of transport which can undoubtedly claim to be faster than any existing means must have a commercial future, unless it is so dangerous that it cannot be used, or it costs so much that it is outside practical politics, which I will come to later.

Now as to being the fastest mode of transport, I will show you a map of Europe, with the distance to certain well-known cities defined, and compare them with the fastest times known by pre-war routes compared with reaching them by aeroplane, and you cannot but agree that whatever the disadvantages an aeroplane has, or more properly you think it has, it outdistances with the greatest facility any other mode of transport.

If you will look at the map of Europe, you will see that Paris is brought within three hours of London instead of seven, that Rome means 12½ hours instead of 42 hours, and that Petrograd and Constantinople are both brought within a day's journey, and other instances of fast travelling. This map should be sufficient evidence, I think, to fully prove my contention that the aeroplane outdistances any other mode of transport with the greatest ease. The figures I am showing you are not guesswork and are not exaggerated, as the speed at which I have taken the machines is a speed easily attained to-day, viz., 80 miles per hour, and will certainly be increased in the future. The safe arrivals of these long-distance flights will depend largely on the question of landing grounds, to which I will come later.

Now as to the second point, safety.

Flying, even from the first, has never been really dangerous, although it has been thought so in the minds of the general public. We are in a position to-day to decide this—at least, those who are in close touch with flying. One takes risks in many ways, but the question as to whether these risks constitute a danger concerns the percentage of accidents.

One takes risks, for instance, in using a lift, and the question as to whether a lift is dangerous or not is merely one of how many people are injured or killed in using lifts. We are presumably taking risks this evening from Zeppelin raids. One takes risks in crossing the street, and in every case a decision as to whether a thing is dangerous or not is one of statistics. In flying, if statistics were taken, for instance, of the number of miles flown per accident, of the number of accidents at any aerodrome per annum, and so on, it would be found that although it is evident one is taking risks in the air, these risks do not constitute a danger. For instance, we all know that the Hendon Aerodrome has been established since 1910, and we know the number of accidents that have taken place there. This certainly would not constitute flying at Hendon as a danger, but even then from these risks of flying one must deduct such points, for instance, as dangerous machines, of which there were many in the early days; one must deduct the acrobacies which many pilots perform; but even without those deductions most people in this room know that the odds against an accident in getting into a machine and flying anywhere you like are very large. To-day most flying is war flying with war risks. It must again be remembered that flying is very young, and if one puts it on the same plane as motoring in the early days, motoring would be criticised as highly dangerous. Much of the flying in pre-war days has been in competitions, and one can recollect the enormous number of fatal accidents in the early motor car races. It is, of course, difficult to obtain exact statistics of the number of miles flown, &c., but I think I may be regarded as possessing a fairly long practical experience of flying and more or less common sense, and, frankly, I should never have flown if I had thought for one moment that I was going to be killed. I have always regarded it as very long odds that I should *not*, and even in those days the risks were considerably more than they are to-day.

I am dilating a good deal on safety, as I think it would be a very small future for aircraft after the war if it were looked on as highly dangerous, and the public must be instructed by practical demonstration (which means aerial services which run day after day) that flying is a good deal more practical than it looks. On this point of safety also the question of landing grounds is of immense importance, and I will show you later on why this is so.

And now for the third point, viz., the cost of running an aerial service. I think it would astonish a great many people if I could prove that the running costs of an aeroplane are not more than those of a motor car, and I am going to quote from a chapter in a book entitled "Flying," by Hamel and Turner, to which I contributed several years ago. Four types were given, and the running costs in the air were as follows:—

Type A	.. 2½d. per mile.	Type C	.. 5½d. per mile.
Type B	.. 4½d. ..	Type D	.. 3½d. ..

These figures, of course, refer to peace times so far as cost of petrol, &c., is concerned, but it refers to an old type of machine with about half the speed of the present-day machine. Repairs should cost less, if anything. I have further taken out the running cost per mile in the air of late types of machines of which I have intimate knowledge. These machines may all be put down as doing considerably over 100 miles an hour, but we will take them as covering 100 miles an hour, although personally I think that the wind will average itself, that is to say, one day it will be against and another day with the machine. The cost of these machines in the air is as follows:—

	per mile.
A. Carrying useful load of 1,800 lbs., including pilot and fuel .. .. .	6½d.
B. Carrying useful load of 1,000 lbs., including pilot and fuel .. .. .	5d.
C. Carrying useful load of 450 lbs., including pilot and fuel .. .. .	2½d.

Now in talking about the cost of aircraft as compared with other forms of transport I have so far only dealt with the running costs and have shown you how very cheap it is, but in order that the whole of the aeronautical industry should not leave the room to register aerial transport companies, it is necessary to go into figures much more deeply, as there are other costs besides running costs. On the other hand, it is necessary to remember that before you can use a motor car, or a motor lorry, you must have a road on which to run it, and the average cost per mile of this road in capital expenditure alone may be put down as about £6,000 per mile.

A railway train before you can run it requires a capital expenditure which, taking the average of various countries, may be put down as £24,000 per mile. Taking, therefore,



a journey of, say, 100 miles, as we must have some unit, the capital expenditure, apart from running cost, comes out as follows:—

Railway .. £2,400,000. Aircraft .. £60,000

I do not for one moment suggest that, once the capital outlay on the railway has been made, it will not carry, to a huge extent, much more traffic than the aeroplane line, but until that traffic is forthcoming the aeroplane will, firstly, do it without such capital expenditure, and secondly, will always do it very much faster.

The natural obstacles encountered by the railway and the road may be unsurmountable. The air is free of any such obstacles.

I will now take you through the costs of a sample route, and I suggest London-Paris as an instance. We can take it that if the journey is done in half the ordinary time we shall have mails and passengers—some because they want to get there quickly, others because they wish to avoid the Channel crossing, and a good many, at first, for curiosity. Now to start a Commercial Service we are not asking for millions of passengers or tons of mails; we are not thinking of rivalling the Tubes.

In putting these before you I would make it quite clear that they are costs of to-day, which I think it is right I should take, as if I begin to prophesy you will doubt me at once. At the same time I have not the slightest doubt that these figures, as times go on, will come down enormously, just as the cost of running omnibuses has come down since the time when the first petrol omnibus nearly ruined every company running them, and I would like to say without much misgiving that within a certain period you may halve them.

#### AERIAL SERVICE, LONDON-PARIS (FIG. D).

One machine each way daily.

Carrying 2,500 lbs., less petrol and oil and pilot, for, say, 300 miles.

Capital—9 machines at £2,500, £22,500; working capital, say, £12,500. Total, £35,000.

At 10 per cent. interest per annum, £3,500, or £9 6s. 8d. per day for 600 miles, 3½d. per mile.

Sheds—London, £500; Dover, £200; Calais, £200; Amiens, £200; Paris, £500. Total, £1,600.

Say £4 10s. per day for 600 miles, 2d. per mile.

Labour—London, 12 men; Dover, 2 men; Calais, 2 men; Amiens, 2 men; Paris, 12 men. Total, 30 men.

At £3 10s. per week equals £15 per day for 600 miles, 6d. per mile.

Pilots—3 flights one way per week per pilot requires for 14 flights per week 4½ pilots, reserve, say, 1½ pilots, equals 6 pilots, at £500 per annum each equals £3,000 per annum, say £8 5s. per day for 600 miles, 3½d. per mile. Total cost per mile, 1s. 3d.

= 2,000 lbs. for utility purposes.

Machines—London, 2; Dover, 1; Calais, 1; Amiens, 1; Paris, 2; Spares, 2. Total, 9.

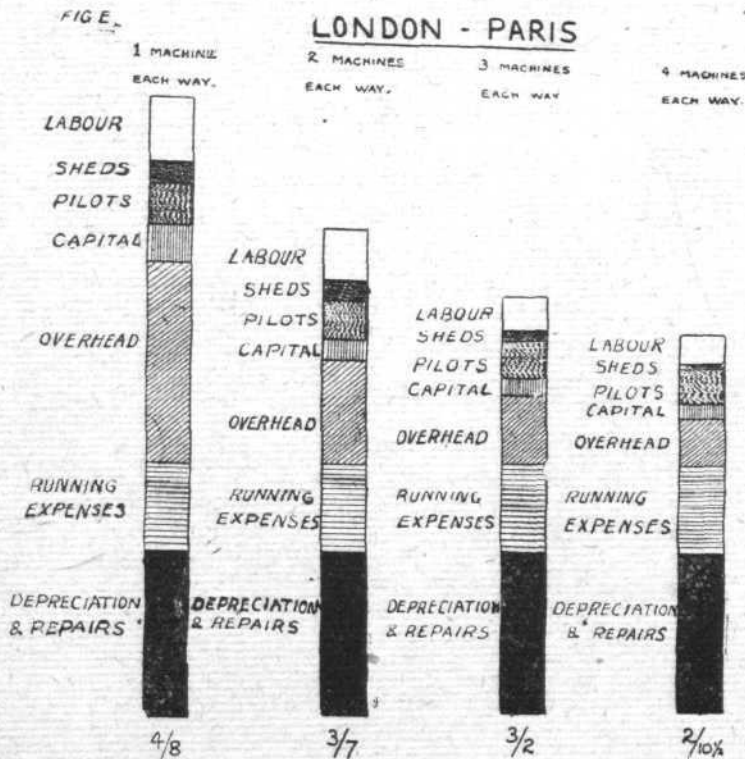


Fig. E.

Running Expenses—24 gallons petrol and 5 gallons of oil, taking speed at 100 miles per hour, 8d. per mile.

Depreciation and Repairs—Allowing complete overhaul every 100 hours, flying 300 miles per day at 100 miles per hour equals overhaul every 33 days. 25 per cent. off two machines at £2,500 each equals £1,250 equals £38 per day for 600 miles, 1s. 3d. per mile.

Overhead Charges—Management, £3,000; clerical work, &c., £1,600; advertising, &c., each end, £6,000; offices, &c., £1,000; Contingencies, £2,400. Total, £14,000.

Say £40 per day for 600 miles, 1s. 6d. per mile; plus, as above, 1s. 3d. per mile. Total cost per mile, 4s. 8d.

#### PARIS-LONDON (FIG. F).

##### Profit and Loss.

Passengers—Cost, say, 3s. per mile. 300 miles = £45. 2,000 lbs. = 12 passengers. Cost per passenger, £3 15s. Charge per passenger, £5. Profit per machine each way daily, £15; 12 passengers each way, four machines, profit £43,000 per annum; 11 ditto, profit £30,000; 10 ditto, profit £14,000; 8 ditto, loss £14,000; 7 ditto, loss £29,000; 6 ditto, loss £40,800; 5 ditto, loss £58,000; and so on.

#### PROFIT AND LOSS (FIG. G).

Mails—Load, 2,000 lbs. = 32,000 ozs. Cost per oz., ½d.; charge, say, ½d.; Charge, 3 lb. parcel, 2s. Full load each way, 4 machines, profit £60,000 per annum; three-quarter load each way, 4 machines, profit £14,000 per annum; half-load each way, 4 machines, profit £35,000 per annum; and so on. Total cost of 4 machines each way, £130,000.

#### LONDON-MARSEILLES (FIG. H).

8 hours. Passengers, £10; mails, 1d. per oz.

#### LONDON-CONSTANTINOPLE.

20 hours. Passengers, £25; mails, 2½d. per oz.

Now you will have seen from these costs that I have put before you that passenger services are not high for the speed of journey, and present a really commercial proposition, although at a competitive price they are slightly higher than by train and boat, whilst mails present an easier proposition, and it seems to me that the solution is a mail service subsidised by the Government with the right to carry passengers.

It is certain that the aeroplane is going to be used by business men for business purposes. No other mode of transport can touch it. Whether it costs 5s. per mile or £5, the business which can be done on certain occasions will only be done by arriving in time.

It will be seen from Fig. D that the total cost per mile of running a machine is 4s. 8d., running one machine each way. By reference to Fig. E, however, it will be seen how rapidly the cost comes down if two, three, or four machines are run each way daily, and I think it is fair to assume that between two capitals, such as London and Paris, at least four machines each way will be necessary, and we can, therefore, for the purposes of this paper take 3s. per mile as being a safe figure.

Fig. F shows how this cost, reduced to passengers, will come out. It will be seen that the charge per passenger to Paris, at a profitable rate, so long as the machines are fully loaded, comes out at £5, which at the speed he is carried is certainly a commercial price. It will be noticed here by the figures shown at the bottom that, whilst there is a good profit if the machines are full of passengers, a reduction in the full load very easily turns the profit into a loss, and this is one of the points which will have to be considered very carefully indeed. The services must be started, and either subsidies or guarantee against loss must be forthcoming.

Fig. G shows that mails are even more commercial; that is to say, a letter weighing one ounce can be profitably carried to Paris for one halfpenny in half the time it could reach there under the present methods, or a 3 lb. parcel for 2s. Here again it will be seen that profits can be made carrying full loads, but directly the load is reduced it is quite easy to make a heavy loss.

From Fig. H you will see that, based on our London-Paris costs (Fig. D), a passenger can go from London to Marseilles in eight hours instead of 23, at a cost of £10 per head; or that mails can be carried at a penny per ounce.

Constantinople or Moscow can be reached in 20 hours, at a cost per ticket of £25; or mails at 2½d. per ounce, both of which I think proves still more the future of commercial aeronautics.

For mail services I am certain that the aeroplane can, by its speed and moderate cost per letter, compete with existing mail services. I have always held these views, and they are expressed very simply by the fact that I arranged with Mr. Grahame White seven years ago to carry mails from Blackpool to Southport, and endeavoured to interest the then



Postmaster-General in it. Specialised services of all sorts will exist also. I have taken the cost of London-Paris, as it is a familiar route, and probably the most expensive, but there is another outlet for commercial aeronautics than from capital to capital, viz., providing a means of communication by which, at comparatively small cost, a moderate-sized community or colony may be established, say 100 miles from the railway, in many of our Overseas Dominions, and whilst small will depend on the aeroplane, and when grown large enough will have its railway. In other words, the new science of flying may be regarded as a means of development, as a feeder for the railways existing, or without laying a road at all either for motor-cars or railways, until development warrants them. Certainly on the start of such services a Government subsidy or guarantee will be an absolute necessity.

Now another thing which you may doubt, but of which I have had considerable experience, is reliability. You can gauge this in any way you like. How many machines cross the Channel daily? How many machines fall into it? I am afraid I cannot answer these questions, but perhaps some enterprising Member of Parliament present will put the question in the House. But within my own experience, even with machines not nearly so reliable as those of to-day, I have no doubt about the reliability. My Company, The Aircraft Manufacturing Company, has been in existence since 1911. It has delivered—I cannot tell you the number—but a great many machines to Farnborough. The only stops we can record are in four cases, and in every case these were only ordinary stoppages, such as in the case of a car, with a choked petrol pipe, or something of that sort. I will also give you a few recent instances of practical uses of aeroplanes, again within my own knowledge, although I am certain these would be confirmed and multiplied if I were to ask outside.

A short time ago the War Office required one of our managers at Chelmsford for a certain purpose. They telephoned at about 11.20 saying that it was absolutely necessary for him to be there by 12 o'clock. Here is an instance where aircraft presented the only means of transit. Again, a recent instance is a case where the War Office telephoned asking Captain Hucks to go to Huntingdon to test a machine for them. The actual distance there and back is 116 miles, and Captain Hucks' flying time there and back was inside an hour. I believe General Brancker, time after time, has visited various aerodromes by air, putting in visits during the day which would be perfectly impossible with any other mode of transit. I met Captain de Havilland one evening at Boulogne by accident, he having flown from Farnborough to Headquarters in in 1 hour 25 mins., and he tells me that this must have been surpassed many times.

Another point which will be brought up against flying for commercial purposes is weather, and this we may, I think, divide into wind and fog.

Now as to wind, it is to-day almost safe to say that no wind will stop a good pilot from flying. Over and over again we

distance covered. Wind is very much overrated owing to the difficulty in flying in a breeze in the early days, and I am going to show you a chart giving the proportion of days in the year on which the wind was over 40 miles an hour, which would still leave a present-day machine 80 miles an hour for covering distance. You will see that even if aerial services stop, which they certainly will *not* do, altogether on these

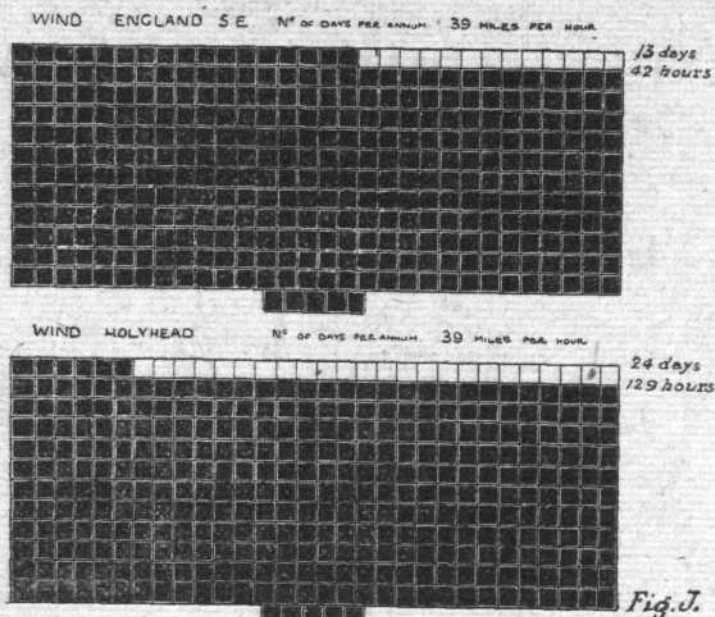


Fig. J.—Wind charts.

days, it only means that for a comparatively small proportion of the year commercial aeronautics will revert to more ancient modes of transport.

Fig. J gives, by a diagram, the days in the year on which the record for South-East England, of a wind of 39 miles an hour or over, is recorded. The black squares represent 365 days in the year, and it will be seen from the white squares that only 13 days are recorded in the year with a wind of 39 miles an hour or over, and if divided into hours, only 42 hours in the year. Taking one of the worst instances, viz., Holyhead, it will be seen that there are 24 days recorded in the year only, so that if you assume no flying takes place on these days it does not seriously detract from the advantages of commercial flying. Personally I do not think a wind of

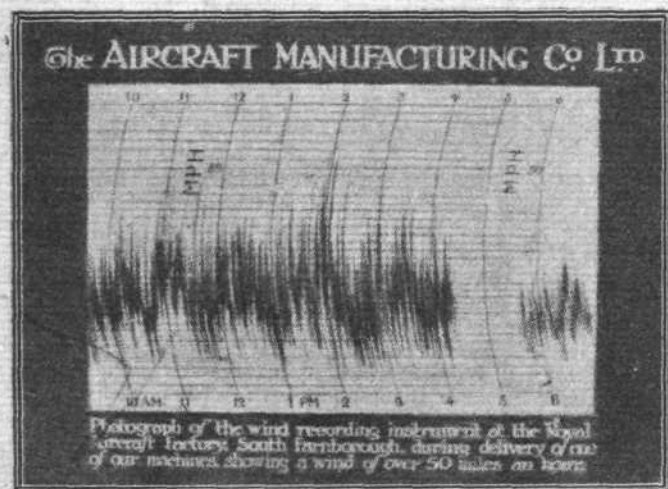


Fig. I.—Verrier's chart.

find in the official communiqués that during hail, snow and storm, our pilots are flying. Again, however, taking only my own experience, I will show you a wind in which flying was possible in pre-war days.

Now in this case the speed of the machine was about 60 miles per hour, and the machine, although blown to a standstill, so far as speed through the air was concerned, was still flying. To-day our machines double easily the speed, and, therefore, in the same wind still leave behind them 60 miles of

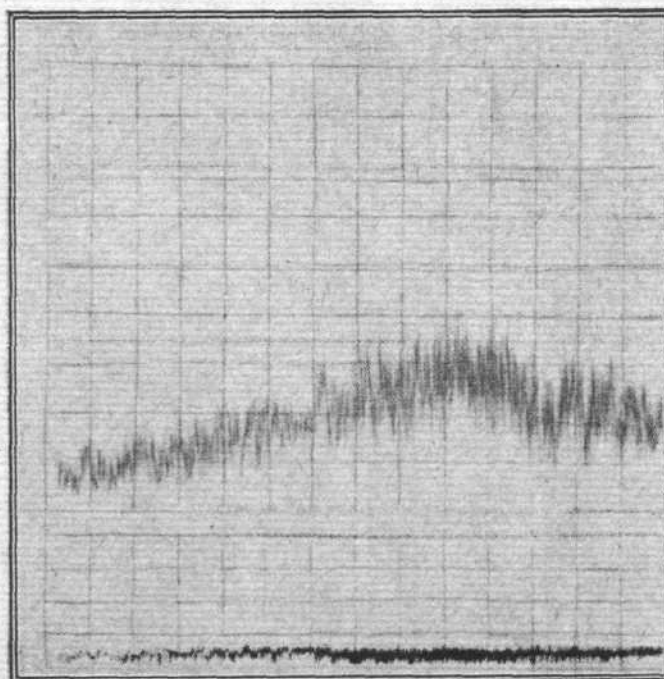


Fig. K.—Wind chart.

39 miles an hour will stop an aeroplane at all, and I give a recent instance, viz., the presentation of a machine to South Africa, only a few days ago, at which I was present. On that occasion I thought the wind was fairly strong, and I therefore asked the Meteorological Office to let me have a record, which I now show you. (Fig. K.) Now on this occasion, as people



will remember, nobody thought about the wind at all. Captain Hucks was flying at the time, taking passengers, looping the loop, &c., and certainly if he had been asked to start for Paris that afternoon he would have thought nothing of it.

The next thing is fog, certainly a bugbear, but even here you will see that it is not so black as it is painted, and again means that, even if we stop flying altogether in a fog, commercial aeronautics has still an existence. But with our aerial landing grounds in existence no notice will be taken of local fog if our reports show that generally the line is clear. For many years, if there is a fog at Hendon, which is usual, owing to the lie of the land, we have taken no notice on long trips if our reports show the fog is only local, and our aerial service reports from all the landing grounds *en route* in foggy weather would be part of our business in conducting an aerial service.

Again, if foggy in London we might start from Dover only that day, forwarding the mails then by car or train, or again,

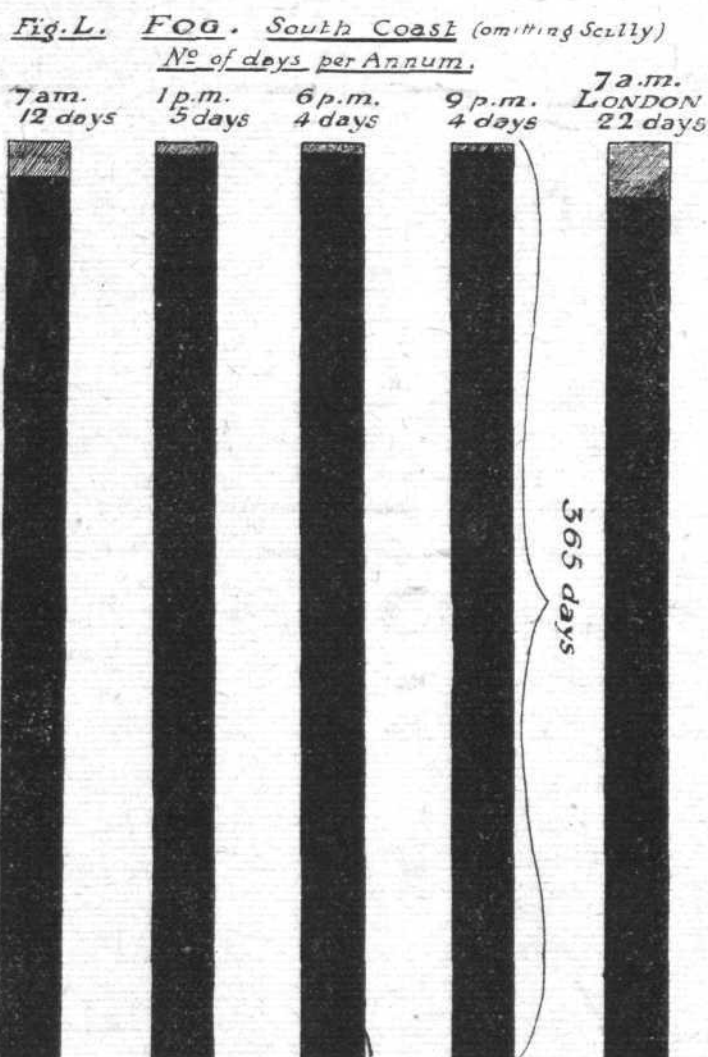


Fig. L.—Fog chart.

we might convey the mails even to Calais, and thence on by aeroplane. Necessity is the mother of invention, and I look to overcome difficulty in this respect.

Fig. L again shows the record of the Meteorological Office, and it will be seen that, taking the figures for the South Coast, omitting Scilly, at 7 a.m. there are only 12 days in the year on which fog is recorded; at 1 p.m. only five days (which shows that the fog has cleared off); at 6 p.m. five days; and at 9 p.m. four days in the year. On the right-hand side of Fig. L the record for London at 7 a.m. is shown, in which you will find only 22 days recorded out of 365. These records are presumably correct, and I believe that we attach a great deal more importance to fog than we need. If one casts one's memory back to how many times one's train is delayed by fog, and how many times even an aeroplane is delayed by fog at the present time, I am sure that we look on this matter as more serious than it is. Again, however, the question of landing grounds will also largely affect fog. I have recently combined with a flying officer in the production of a very small kite-balloon carrying no passengers, and I believe in case of fog or night work one of these sent up, say, 1,500 ft., *i.e.*, above fog, would practically

solve the difficulty if the landing ground scheme to which I will allude later is adopted.

I have mentioned the questions of safety, weather and fog, &c., as previously to the war I was merely looked on as an enthusiast, and none of my friends believed in aviation. Since the war public opinion has entirely changed. The man in the street no longer looks on an aeroplane as something on which somebody is mad enough to do acrobatic feats, but has a very decided belief in aircraft for war purposes, and my purpose to-night is to persuade you to believe in it for commercial purposes, and I hope that nobody will leave this hall to-night without being so convinced.

I should now like to touch on a subject which, in my opinion, is very important to commercial aviation, *viz.*, the question of landing grounds, and my view is that we shall have to establish landing grounds all over the country and all over the world not more than, say, 10 miles apart. In talking, say, of a voyage from London to Constantinople, this sounds a stupendous undertaking, but if analysed one finds that it is quite simple.

Allowing £250 per annum as the cost of hiring and maintaining a landing ground, it means that from London to Constantinople, 1,600 miles, the landing grounds would be 160, which at £250 per annum each would be £40,000 per annum. What is this spread over the countries through which this route would pass, assuming the importance of having this very vast connection all over the world? But looking at it in another way, even if the cost of a landing ground was paid by the machine which passed over it, it is almost an infinitesimal matter. Taking our previous figures of London—Paris, with eight machines per day, *i.e.*, four each way, the number of machines passing over the landing grounds between London and Paris would be 2,920 per annum, and a tax of about 2d. per mile on each machine would return the whole costs of the landing grounds. But the London—Paris route will also be the running line for many other services beyond Paris and London.

I regard the landing grounds as being of the greatest importance. To start with, no country can have machines flying over it without control, and therefore a landing ground on entering a country is necessary, putting it on the lowest ground even of smuggling goods into the country. Then again, I believe if I asked anyone in this room to fly from London to Tokio they would say: "You will never arrive there," but on the other hand, if I asked them to fly 10 miles, they would know that they would certainly arrive; and therefore to credit what I have told you so far, I am going to tell you it is important to regard these long distances as merely 10-mile stages. This question of landing grounds affects every point in my argument. Safety, for instance. The forced landing, the bugbear of aviation, will be avoided, as a pilot with a machine at a height of 3,500 ft., even if he stops exactly in the middle of two landing grounds, will arrive at either, but the probability is that he would be very much nearer one. We may therefore consider London to Tokio as aerodrome flying—that is to say, the pilot will always have a flying ground to alight on. As regards the pilot, he will have no strain in keeping his eyes open for a landing. He will simply fly on, passing Flying Ground No. 27, 28, 29, &c., knowing that he is always safe if his motor stops at any moment.

Then, again, the question of fog will certainly be overcome at once by 10-mile landing grounds. Some form of mark will easily be developed, such as a smoke signal, some form of penetrating searchlight, or some other device, such as the small kite-balloon I have recently devised.

The question of night flying is again solved by the landing ground, as with a searchlight every 10 miles a pilot can fly on regardless of maps or routes, always with the searchlight guiding him.

I am not, of course, suggesting that landing grounds should be aerodromes; they would be simply suitable fields, which need not be absolutely on the line of route, with probably a telephone box, and some with searchlights, and some with sheds. This scheme has already been carried out in Italy, and has been entirely successful, as I believe I am safe in saying that the cost of the landing ground has practically been repaid by the saving in smashes on landing in what is a somewhat difficult country.

Now I will ask you to accept this idea of the 10 mile landing ground as being perfectly feasible from a national point of view and from an international point of view, but it is a matter in which Great Britain and the British Empire should take the lead.

The landing ground scheme also presents a method of avoiding collision in the air, which is bound to happen if no arrangements are made, and it would be very simple for an outward pilot to keep to the right and an inward pilot to keep



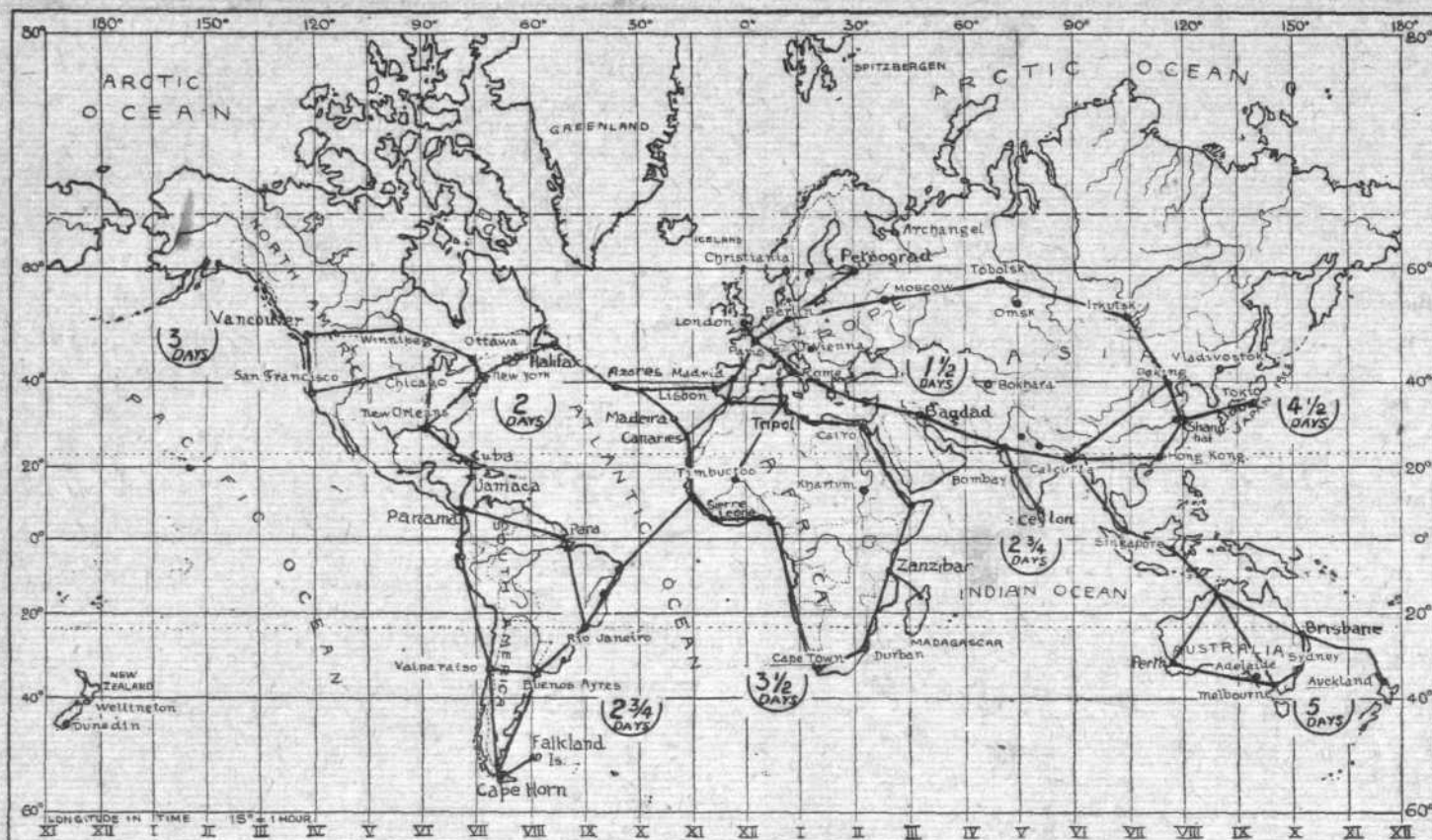


Fig. M.—Map of World.

to the left. Then again, once you accept this proposition, even crossing the Atlantic becomes feasible. What is to prevent us having a ship, not necessarily anchored, but always cruising, say, every 50 miles from the Azores to Newfoundland. On the North Sea you will find the pilot cutters which are there from one end of the year to another, with the pilots awaiting inward and outward bound ships. Compared with the enormous scheme a mail between London and New York will present, the cost of 10 or 20 ships (which may be simply fixed lightships if feasible, or small cruising ships if necessary) is infinitesimal.

I understand that the number of week-end telegrams, 4s. 6d. for 25 words, which are not able to be sent because the lines are so full, is enormous, but this is nothing compared to the tonnage of mails which would be available if they could be carried from London to New York and *vice versa* in two days.

It is harking back to a very long time ago to the Pony Post in America, but in Mark Twain's "Roughing It" you will find an account of letters being carried 2,000 miles in eight days at the cost of £1 per letter. This really is very much the system of an Aeroplane Mail, but at a commercial rate and enormous speed. The riders galloped night and day, winter and summer, 10 miles stages, using a fresh pony for every stage. They were apparently, even in those days, streamlined, that is to say, the mail packets were fitted to the rider's body. Again like an aeroplane, they carried no extra weight, they used a racing saddle, and wore light shoes or none at all. The letters were written on paper as thin as gold-leaf and thus bulk and weight

were economised. Eighty pony riders were in the saddle night and day, stretched in a long procession from Missouri to California, 40 flying eastward and 40 westward, and using amongst them 400 ponies. So will the Aeroplane Mail soon traverse the world in stages, some being stations, others being passed over.

I will presume that you have now accepted this principle, and I now propose to show you a map of the world, on which I have shown routes which you assume will be covered with 10-mile landing grounds. Once assuming that, I believe you will accept my previous figures on commercial aeronautics as a perfectly feasible proposition. You will see then what an enormous thing commercial aeronautics represents, and what

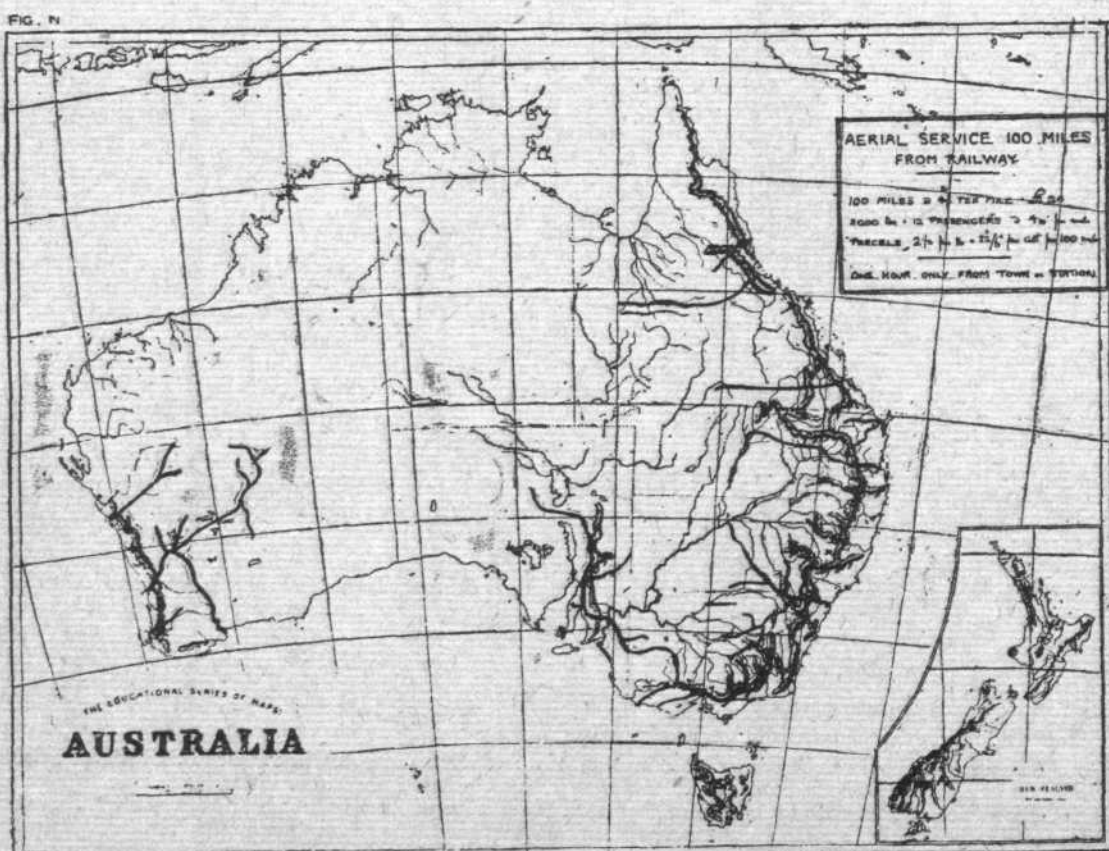


Fig. N.



a revolution in speedy transit. Ceylon becomes 2½ days from London, Tokio 4½ days, Sydney 5 days, Cape Town 3½ days, Vancouver 3 days, and so on; and once you have accepted the premises on which I started you will admit that I am only putting before you propositions which are perfectly easy to carry out.

You will see on this map that I have marked Timbuctoo, which sounds the most improbable place that anybody would wish to arrive at, but strange to say it is one of the places where an aerial service is already projected by the French, which really affords a very good instance of the use of the aeroplane. At the present moment it takes three to four months from Bordeaux to Timbuctoo, and owing to this the many officers employed spend half their time going and coming. The cost of this journey at present is £120, and it is estimated by a friend of mine in the French Government, who has given me this plan, that it could be done by aeroplane for £100 per journey, and taking it in easy stages it would only be a matter of days instead of months.

Instances in the Overseas Dominions, where not yet developed, we shall find in hundreds, where the aeroplane can be used, but I show you in Fig. N, as an example, a map of Australia, showing you the railways marked on it. You will see that an aeroplane service on each side of any of these lines of 50 to 100 miles would certainly mean the establishment of a great many small townships, which eventually, when big enough, will, of course, have their railway. This, coming down to pounds, shillings and pence, presents an absolutely commercial aspect, as shown on the map. A passenger from the township to the railway, or *vice versa*, can be carried profitably at fourpence per mile, which is a little more than first-class fare in this country. Mails and goods can be delivered at 2½d. per lb., and this applies to all the Overseas Dominions.

One point I should like to disabuse everyone on at once is the discomfort of an aeroplane. At the present time it is not, of course, suited for carrying a large number of passengers, but I have gone carefully into this problem with my drawing office, and allowing for the reduction in speed the alterations will necessarily make, we find that it is perfectly easy to design a comfortable cabin in which passengers would be quite as much at their ease as by any other method of transit. When, therefore, you come to the discomfort of a shaky train, the dirt, and the annoyance of changing from train to boat and boat to train, &c., you will find that the comfort of the aeroplane is easily superior to the discomforts one goes through on an ordinary journey to-day. You will later on, on the cinema films, see the interior of the big Porte Boat, built by my company, and you will see that already we have a machine which has a commodious cabin.

Now I should like to explain that my figures and my fancies this evening have been based on present day machines, but we must take into account that the aeroplane has only really been encouraged since war began and for war purposes. It is therefore fair to assume that the aeroplane has developed along entirely wrong lines from a commercial point of view, and the present design is wrong (thinking commercially) for the following various reasons:—



#### An Aerial Battle Over Belgium.

FROM Sans van Gent the *Telegraaf* learns that a fight occurred during the evening of May 19th, between Allied and German airmen, 12 aeroplanes of the former, arriving from the sea, being engaged by nine Germans. The whole population turned out to witness the engagement, which lasted over half an hour, the Germans ultimately retiring, with their numbers reduced.

#### Aeroplanes in the Carso Battle.

It is authoritatively stated that in the great battle on the Carso last week the Italian air fleet engaged consisted of 140 units, of which 29 were battle planes, 42 observation machines, 16 hydroplanes and 53 chasing planes. During the attack these machines dropped 10 tons of bombs and fired 10,000 machine-gun rounds at enemy trenches, depôts and gun positions. Although for this purpose they flew at a dangerously low altitude, they returned without a single casualty.

#### Austrians Drop Infected Sweets.

DURING the last Austrian air raid over Codigoro, near Ferrara, writes the *Times* correspondent in Rome, on May 23rd, the airmen threw out sweets, which on examination were found to contain bacilli of cholera. An order has been issued directing that all wells should be covered, as it is thought probable that in future raids the enemy may endeavour to infect the water supply.

1. Excessive climb demanded in a fighting machine, and power thrown away to obtain this.

2. Excessive attention devoted to visibility, gun positions, &c.

3. Excessive strength for fighting manoeuvres, &c.

The present unpleasant features of an aeroplane, *i.e.*, noise, oscillation, cold, cramped positions, are all due to war design and can all be eliminated in a passenger-carrying aeroplane without reducing this speed very much, but only by sacrificing climb, visibility, guns, &c.

In criticising the cost of running an aeroplane service and comparing it with train service or ships, one ought to consider how very unpractical and useless the first trains or ships were, and how exceedingly unpleasant travelling in them must have been. Passengers in the first train, I believe, were just as cramped as they are to-day in an aeroplane. The oscillation was greater, they were covered with smoke and cinders and the speed was limited to the rate at which a man could walk in front with a bell.

The early ships were equally unstable, and it was a very doubtful point when a ship set out if it would arrive at its destination, if ever.

If one reads any of the accounts of the early voyages one is struck by the fact that very frequently they set out from a place and returned six months later, having met adverse weather, and it was the custom to say Masses for anybody who thought of doing anything so hazardous as going a sea voyage.

The safety of the present steamship transit, I would submit, is due in the first place to engine development; also to the fact that every country has spent millions of money in harbours, lighthouses, docks, shipyards, &c., &c., and for an aeroplane service exactly the same steps will have to be gone through to ensure success for the commercial aeroplane.

Looking a good deal ahead one point occurs, *i.e.*, that the geography of the upper air is at present quite unknown, and assuming the large aeroplane comes into use with reliable, powerful, and compact engines, it is reasonable to suggest that steady air currents, &c., may be found which would enable the trip to be made at a much greater speed and with much greater power than is at present even anticipated and consequently much greater economy.

Now all I have been able to do to-night is to give you something to think over, something to digest; but I hope I have proved that flying has come to stay, and must from an Imperial point of view be supported in every way. Mail services, as I have shown you, can be established commercially; business men can use the aeroplane commercially for many purposes, and for pleasure nothing can beat it. I have arranged a somewhat imaginative cinema film showing you something of what an aerial service will look like, and the last thing I have to say is this. Remember that we live on an island, remember that we have always depended on the sea for our protection, and last but not least, remember that we are an Empire. On all these points it is necessary to maintain a huge aerial fleet, and the proper support of commercial aeronautics will enormously assist these ends. This time we must be first.

#### Raiding Along the Danube.

TOWARDS the end of last week German aircraft carried out several raids on towns situated in the Danube region, dropping many bombs and making numerous victims. A raid on the town of Ismail was particularly destructive, a large number of women and children being killed or wounded.

#### Another Apology by Germany.

GERMANY has apologised to the Dutch Government for the fresh violation of Dutch territory by a Zeppelin which appeared over Deventer on the night of May 7th. It is explained that "the airship lost its way owing to heavy clouds and other atmospheric influences."

#### Germany and Reprisals.

INFORMATION to hand via Switzerland is to the effect that all British and French flying officer prisoners in Germany are now being transferred from the various prisoners' camps to Karlsruhe and Freiburg, where their presence is regarded by the Government as an effective obstacle to further Allied air raids.

A report from Karlsruhe states that, acting in harmony with the local burgomaster, the military authorities have distributed officers among the principal hotels there, while in order to protect poorer quarters of the city several schools have been transformed into lodging-houses for the officers.





# The British Air Service



"PER ARDUA AD ASTRA"

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

## Royal Naval Air Service.

Chaplain the Rev. C. J. E. Peshall, B.A., to the "President," for Royal Naval Air Station, Kingsnorth, to date May 25th.

Admiralty, May 22nd.

C.P.O. (11) R. Common, promoted to Warrant Officer, 2nd grade (Temp.), seniority May 20th.

Admiralty, May 23rd.

J. S. Martin entered as Prob. Flight Officer (Temp.), seniority April 14th. The following have been entered as Prob. Flight Officers (Temp.), seniority April 19th: F. M. McLellan, W. S. Anderson, L. Code, J. G. Clark, J. W. Adams, D. B. Mulholland, J. F. V. Chester, D. Snider, A. P. Beal, D. C. Hopewell, E. L. Biggar, G. P. Armstrong, O. P. Adam, G. T. Steeves, L. A. Christian, R. M. Bente, V. R. M. Junor, J. D. Vance, S. S. Richardson, G. M. Scott, W. J. Peace, J. S. Stauffer, F. Wood, D. R. Kerr, G. Raney, W. A. Moyle, S. D. Culley, F. R. Bicknell, H. D. Jack, H. J. Flynn, A. P. Bell, E. Delorme, J. H. Johnson, B. E. Barnum, J. B. Kerr, W. F. Robinson, E. Wilson, G. L. Macpherson, W. J. Mackenzie, J. G. Carroll, W. D. Graham, E. L. McIlraith, H. Dupuis, H. J. Elliott, A. A. Cameron, G. H. Allely, E. N. Gregory, W. R. Glenny and J. Tomkins.

P. E. Linder entered as Prob. Observer Officer (Temp.), seniority May 21st. Temp. commissions as Lieut., R.N.V.R., have been granted to the following, seniority May 22nd: C. E. Link, L. A. Kennedy and Sir J. K. D. Mackenzie, Bt.

Admiralty, May 24th.

Actg. Sqdn. Comdr. B. H. Mulock, D.S.O., specially promoted to the rank of Sqdn. Comdr. for war services, with seniority May 21st.

A. H. Stuart entered as Temp. Lieut., R.N.V.R., to date May 23rd.

T. Holmes entered as Temp. Sub-Lieut., R.N.V.R., to date May 23rd.

Chief Armrs. W. H. Miles and R. McLorinan granted the rank of Temp. Warrant Armrs., both to date May 21st.

Admiralty, May 26th.

The following have been entered as Prob. Flight Officers (temp.), seniority as follows:—H. T. Roper, J. A. Reeve, Q. J. Stevenson, V. D. Grant, J. H. Hardman; May 20th. W. O. Watt; May 9th. J. Ellingham; June 10th. T. H. Morgan entered as Prob. Observer Officer (temp.), seniority May 31st. A. H. Ellis entered as Warrant Officer, 2nd grade (temp.), seniority May 28th. C. B. C. Williams reinstated as Flight Sub-Lieut. (temp.), with original seniority of May 2nd, 1915.

Temp. Commissions (R.N.V.R.) have been granted to the following, seniority May 25th:—Lieuts.—J. B. Butler and W. B. Walton; Sub-Lieut. T. H. Webb.

## Royal Flying Corps (Military Wing).

London Gazette, May 23rd.

Flying Officers.—2nd Lieut. D. R. Mullan, Notts and Derby R. (T.F.), and to be secd.; April 27th. Paymr. and Hon. Capt. H. B. Hamber, Can. A.S.C.; April 28th. Lieut. A. G. Peace, Can. Gen. List; April 29th. Lieut. F. C. E. Clarke, Worc. R., and to be secd.; Temp. 2nd Lieut. H. R. Child, Gen. List; April 30th.

Flying Officer (Observer).—Temp. Lieut. M. Weinberg, Gen. List; Dec. 31st, seniority Sept. 14th.

Special Appointment (graded as a Park Commander).—Qr.-Mr. and Hon. Lieut. (Temp. Capt.) W. J. Ryan, R.F.C., an Equipment Officer, 1st Cl., and to be Temp. Major whilst so employed; May 1st.

Equipment Officers, 3rd Class.—2nd Lieut. (on prob.) D. E. Rodwell, S.R.; Feb. 15th. Temp. 2nd Lieut. (on prob.) P. E. Negretti, Gen. List; Feb. 17th. Lieut. E. A. Bradshaw, Can. A.S.C.; Mar. 1st. and Lieut. (on prob.) A. L. Thomas, S.R.; April 12th. 2nd Lieut. (on prob.) D. Gow, S.R.; April 29th.

Memorandum.—Flight-Sergt. L. A. Mudge, from R.F.C., to be Temp. 2nd Lieut. (on prob.), for duty with the Mil. Wing of that Corps; May 7th.

Supplementary to Regular Corps.—The notification in the Gazette of May 1st placing 2nd Lieut. H. N. O'Donnell on the Ret. List is cancelled.

London Gazette Supplement, May 24th.

Wing Commanders.—From Sqdn. Comdrs., and to be Temp. Lieut.-Cols. whilst so employed: Capt. (Temp. Major) L. W. B. Rees, V.C., M.C., R.A.; May 1st. Capt. (Temp. Major) R. M. Rodwell, W. York. R.; May 15th.

Flight-Commanders.—From Flying Officers, and to be Temp. Capts. whilst so employed: Temp. 2nd Lieut. E. B. Mason, Gen. List; Mar. 25th. 2nd Lieut. (Temp. Lieut.) E. L. Benbow, M.C., R.A.; Temp. 2nd Lieut. H. Jackson, Gen. List; 2nd Lieut. (Temp. Lieut.) J. Gilmour, Arg. and Suthd. Highrs.; April 1st. Capt. (Temp. Major) D. E. Stodart, S.R., reverts from Sqdn. Comdr. and relinquishes his temp. rank; April 28th, seniority May 6th, 1915.

Flying Officers.—Temp. Lieut. G. B. Crole, Gen. List, from a Flying Officer (Ob.); April 27th, seniority Feb. 24th, 1916. Lieut. A. L. A. Kane, Can. Gen. List; 2nd Lieut. (Temp. Lieut.) W. J. Wyatt, Devon R., from a Flying Officer (Ob.), seniority Mar. 16th, 1916. 2nd Lieut. P. Perfect, K.O. Sco. Bord., and to be secd.; April 29th. 2nd Lieut. C. Findlay, High. L.I. (T.F.), and to be secd.; April 30th. 2nd Lieut. R. D. Best, A.S.C. (T.F.); 2nd Lieut. C. W. D. Martin, S.R.; May 1st. Temp. 2nd Lieut. D. G. O'Reilly, attd. S. Wales Bord., and to be transf. to Gen. List; Temp. 2nd Lieut. J. Barker, attd. S. Staff. R., and to be transf. to Gen. List; 2nd Lieut. C. H. Trollope, Lond. R. (T.F.), and to be secd.; Temp. 2nd Lieut. (on prob.) E. Hillary, Gen. List; May 2nd. The appointment of 2nd Lieut. C. L. Johnson, Australian Light Horse, notified in the Gazette of April 17th, is cancelled.

Equipment Officers, 3rd Class.—Temp. 2nd Lieut. W. A. M. Austin, Gen. List; April 17th. 2nd Lieut. (on prob.) F. E. M. Bussy, S.R.; 2nd Lieut. (on prob.) W. H. Glaser, S.R.; April 20th.

Memoranda.—To be Temp. Majors whilst specially employed at Army H.Q. India: Qr.-Mr. and Hon. Lieut. (Temp. Capt.) W. R. Bruce, R.F.C.; Lieut. (Temp. Capt.) N. M. Martin, Ind. Cav.; May 23rd.

Lieut. M. Weinberg, S. African Force, to be Temp. Lieut. for duty with R.F.C.; Dec. 31st, 1916, seniority Oct. 16th, 1914.

J. H. Lowry to be Temp. 2nd Lieut. (on prob.), for duty with R.F.C.; Feb. 8th.

Supplementary to Regular Corps.—2nd Lieuts. (on prob.) confirmed in their rank: J. M. Allport, J. O. Clover, E. O. Byam, J. F. Henderson. To be 2nd Lieuts. (on prob.): J. L. Cuthbertson; Mar. 16th. D. P. Gibson; Mar. 21st. L. R. Howland; Mar. 23rd. A. McD. Hamilton; Mar. 28th. C. D. Fairweather; April 2nd. A. E. Brown to be 2nd Lieut. (on prob.); May 10th.

London Gazette, May 25th.

Flying Officers.—Lieut. R. B. Hay, W. York. R., S.R., and to be secd.; 28th

Mar. 28th Apr.: 2nd Lieut. (Temp. Lieut.) F. B. Best, A.S.C., T.F.; and Lieut. W. H. Clark, Middx. R., T.F., and to secd.; 2nd Lieut. G. J. Frost, E. Surr. R., T.F., and to be secd.; 2nd Lieut. R. J. Paterson, Hamps. R., T.F., and to be secd.; Temp. 2nd Lieut. W. R. Brookes, Gen. List; Temp. 2nd Lieut. J. E. Goodman, Gen. List; 2nd Lieut. J. F. Henderson, S.R. The initials of Lieut. J. R. Robertson, Fife and Forfar Yeo., T.F., are now described, and not as in the Gazette of Apr. 18th. Apr. 30th: 2nd Lieut. (Temp. Lieut.) J. Longton, A.S.C., from a Flying Officer (Ob.), seniority July 15th; Lieut. W. M. C. Wallbank, Canadian Field Art.; Lieut. E. H. Read, Canadian Inf.; 2nd Lieut. L. M. Van Eysen, S.R.; 2nd Lieut. O. C. Holleran, S.R. May 2nd: Lieut. R. A. Maybery, Lrs., from a Flying Officer (Ob.) with seniority from Aug. 21st, 1916; Temp. Lieut. D. S. Wilkinson, Camn. Highrs., and to be transf. to Gen. List; 2nd Lieut. H. Brokensha, R.E., T.F., and to be secd. Temp. 2nd Lieut. (on prob.) C. W. McL. Gray, Gen. List; May 3rd. May 4th: Temp. 2nd Lieut. E. W. Hadrill, attd. R. W. Kent R., and to be transf. to Gen. List; Temp. 2nd Lieut. (on prob.) L. E. Lomas, Gen. List; Temp. 2nd Lieut. (on prob.) A. R. Paul, Gen. List. The notification in the Gazette of Apr. 18th, regarding Temp. Capt. R. B. Hay, R.A., is cancelled.

Flying Officers (Observers).—Temp. 2nd Lieut. D. F. Woodford, R. Suss. R., and to be transf. to Gen. List; July 26th, 1916, seniority Mar. 20th, 1916. 2nd Lieut. W. G. T. Clifton, Oxt. and Bucks L.I., S.R., and to be secd.; Mar. 30th, seniority Dec. 29th. 2nd Lieut. A. H. Powell, Oxt. and Bucks L.I., T.F., and to be secd.; May 6th, seniority Dec. 30th. Temp. Lieut. R. A. Manby, Gen. List; Apr. 7th, seniority Jan. 3rd. Temp. 2nd Lieut. N. C. Yonge, S. Wales Bord., and to be transf. to Gen. List; Apr. 22nd, seniority Jan. 11th. Lieut. A. C. Lutyens, M.C., R.F.A., S.R.; Apr. 13th, seniority Jan. 28th. Temp. 2nd Lieut. A. S. Selby, Lan. Fus., and to be transf. to Gen. List; May 7th, seniority Feb. 9th. 2nd Lieut. (Temp. Lieut.) R. E. Heath, Welsh R., T.F., and to be secd.; Apr. 8th, seniority Feb. 23rd. 2nd Lieut. G. G. Fairbairn, Yeo., T.F., and to be secd.; Apr. 20th, seniority Feb. 24th. Temp. 2nd Lieut. A. Boldison, attd. Linc. R., and to be transf. to Gen. List; Apr. 4th, seniority Mar. 9th. 2nd Lieut. F. B. Goodison, S. Staff. R., T.F., and to be secd.; Apr. 7th, seniority Mar. 9th.

Balloon Officers.—May 4th: Capt. E. J. Long, Gord. Highrs., and to be secd. 2nd Lieut. (on prob.) A. D. Wright, R.F.A., S.R.

Equipment Officers, 1st Class.—From the 2nd Cl., and to be Temp. Capts. whilst so empld.: 2nd Lieut. (Temp. Lieut.) P. Young, S.R., Apr. 1st. May 1st: Lieut. L. Findlater, M.C., Manch. R., S.R.; 2nd Lieut. (Temp. Lieut.) I. N. Dracopolis, S.R.; 2nd Lieut. (Temp. Lieut.) C. G. Nevatt, S.R.; 2nd Lieut. (Temp. Lieut.) J. E. Rendle, S.R., May 13th.

2nd Class.—From the 3rd Cl., and to be Temp. Lieuts. whilst so empld.: Mar. 1st: Temp. 2nd Lieut. F. H. Cooke, Gen. List; 2nd Lieut. F. C. Buck, S.R.; and Lieut. H. Phillips, S.R.; Temp. 2nd Lieut. J. H. B. Burgess, Gen. List; Temp. 2nd Lieut. M. O. Illingworth, Gen. List; Temp. 2nd Lieut. W. S. Hammond, Gen. List; 2nd Lieut. P. M. E. Impey, S.R.; 2nd Lieut. J. O. Ruscoe, S.R.; 2nd Lieut. E. C. Mackenzie-Martyn, S.R., Apr. 1st: Lieut. (Temp. Capt.) T. H. Vitty, R.E., T.F., from the 3rd Cl. From the 3rd Cl., and to be Temp. Lieuts. whilst so empld.: Temp. 2nd Lieut. W. E. Smith, Gen. List; 2nd Lieut. E. I. David, S.R.; Temp. 2nd Lieut. P. P. Capelli, Gen. List; Apr. 11th. Temp. Lieut. J. A. Stone, Gen. List, from the 3rd Cl.; Apr. 28th. From the 3rd Cl., and to be Temp. Lieuts. whilst so empld.: Temp. 2nd Lieut. S. Frost, Gen. List; May 1st. Temp. 2nd Lieut. C. S. Kent, Gen. List; May 14th.

3rd Class.—2nd Lieut. (on prob.) S. E. Brett, S.R.; Mar. 12th. 2nd Lieut. W. Burchell-Crookes, R.G.A., Spec. Res.; Apr. 16th. Temp. 2nd Lieut. E. G. Thompson, K. R. Rif. C., and to be transf. to Gen. List; Apr. 20th.

Supplementary to Regular Corps.—The undermentioned 2nd Lieuts. (on prob.) are confirmed in their rank: J. F. Crichton, G. E. Cushing, L. M. Van Eysen, A. F. Fynmore, G. W. Foreman, C. M. B. Martin, D. Sutherland, L. N. Waddell.

London Gazette Supplement, May 25th.

Flying Officers.—Lieut. C. S. Peach, W. York. R., from a Flying Officer (Ob.); April 24th, seniority Mar. 8th, 1916. Temp. 2nd Lieut. (on prob.) I. D. R. McDonald, Gen. List; April 26th. 2nd Lieut. C. L. de Beer, S.R.; April 28th. April 30th: Temp. Lieut. T. M. Nicholl-Carne, Welsh R., and to be transf. to Gen. List; 2nd Lieut. S. A. Harrison, A.S.C. (T.F.); Temp. 2nd Lieut. R. Cameron, Sco. Rif., and to be transf. to Gen. List; 2nd Lieut. (on prob.) G. E. Cushing, S.R.; Temp. 2nd Lieut. L. Lucas, Welsh R., and to be transf. to Gen. List; 2nd Lieut. R. L. Sweeney, Lan. Fus. (T.F.), and to be secd.; Temp. 2nd Lieut. (on prob.) F. V. Bryant, Gen. List; Temp. 2nd Lieut. (on prob.) P. Kent, Gen. List. May 1st: 2nd Lieut. J. A. Jamieson, N. Lan. R. (T.F.), and to be secd.; Temp. 2nd Lieut. (on prob.) R. Trattles, Gen. List; Temp. 2nd Lieut. (on prob.) E. W. Carmichael, R. Innis. Fus., and to be transf. to Gen. List. May 2nd: 2nd Lieut. A. C. Ross, R. Sc. Fus., and to be secd.; Temp. 2nd Lieut. (on prob.) E. S. Guy, Gen. List; Temp. 2nd Lieut. (on prob.) R. H. Reece, Gen. List; Temp. 2nd Lieut. V. G. Smith, attd. York. R., and to be transf. to Gen. List; 2nd Lieut. (Temp. Lieut.) H. E. Weed, Bord. R. (T.F.), from a Flying Officer (Ob.), seniority Mar. 11th, 1916; 2nd Lieut. E. G. Seth-Smith, E. Surr. R., S.R., and to be secd.; Temp. 2nd Lieut. L. S. White, M.C., Gen. List, from a Flying Officer (Ob.), seniority June 3rd, 1916; Temp. 2nd Lieut. (on prob.) T. E. Smith, Gen. List. May 3rd: Temp. 2nd Lieut. E. L. Ardley, attd. K. R. Rif. C., and to be transf. to Gen. List; Lieut. B. T. Owles, R. Ir. Fus., S.R., from a Flying Officer (Ob.), seniority May, 14th, 1916; 2nd Lieut. A. C. B. Harrison, Oxt. and Bucks L.I., and to be secd.; Temp. 2nd Lieut. (on prob.) A. E. Muncester, Gen. List. May 4th: 2nd Lieut. J. McCash, R. Highrs. (T.F.), and to be secd.; 2nd Lieut. (on prob.) G. E. Cooper, R.G.A., S.R.; 2nd Lieut. (on prob.) A. F. Fynmore, S.R.; 2nd Lieut. (on prob.) R. G. Turner, S.R.

Flying Officers (Observers).—Temp. 2nd Lieut. E. T. Turner, A.S.C., and to be transf. to Gen. List; April 22nd, seniority Jan. 1st. Temp. 2nd Lieut. S. Cooper, Gen. List; April 8th, seniority Jan. 7th. Temp. 2nd Lieut. H. S. Richards, Notts. and Derby R., and to be transf. to Gen. List; April 2nd, seniority Jan. 24th. April 5th: Temp. Lieut. R. Hume, R. Fus., seniority Feb. 4th, and to be transf. to Gen. List; 2nd Lieut. U. H. Seguin, S.R., seniority Feb. 23rd. 2nd Lieut. J. C. Cotton, Lond. R. (T.F.), and to be secd.; April 13th, seniority Feb. 23rd; 2nd Lieut. R. H. Lloyd, S.R.; Mar. 27th, seniority Feb. 24th. May 5th: Lieut. D. Sear, N. Staff. R., S.R., seniority Nov. 14th, and to be secd.; Lieut. E. A. Poord, Can. Gen. List, seniority Jan. 10th; Lieut. H. B. Hammond, M.C., R.A., seniority Jan. 23rd, and to be secd.; 2nd Lieut. G. R. D. Gee, R. Suss. R., S.R., seniority Jan. 26th, and to be secd.; 2nd Lieut. A. W. Mather, R. Highrs., S.R., seniority Jan. 29th, and to be secd.; Temp. Lieut. O. J. Partington, R. W. Surr. R., seniority



Feb. 1st, and to be transf'd. to Gen. List; 2nd Lieut. J. A. P. Martin, Yeo. (T.F.), seniority April 8th, and to be sec'd.

**Park Commander.**—Gr. Mr. and Hon. Lieut. (Temp. Capt.) J. Starling, Gen. List, and to be Temp. Major whilst so employed; May 1st.

**Equipment Officers, 1st Class.**—Temp. Lieut. L. G. Harber, Gen. List, from the 2nd Cl., and to be Temp. Capt. whilst so employed; April 28th.

**2nd Class.**—From the 3rd Cl.: Temp. 2nd Lieut. J. W. Askham, Gen. List, and to be Temp. Lieut. whilst so employed; April 3rd. May 1st: Lieut. W. H. Smith, S.R. From the 3rd Cl., and to be Temp. Lieut. whilst so employed; 2nd Lieut. E. F. B. Curtiss, S.R.; 2nd Lieut. P. G. Emery, S.R.; Temp. 2nd Lieut. W. H. Rose, Gen. List; Temp. 2nd Lieut. F. Knight, Gen. List.

**Experimental Officers, 3rd Class (graded as Equipment Officers, 3rd Class).**—Capt. W. L. J. Nicholas, E. Kent R., S.R., and to be sec'd.; Jan. 14th. 2nd Lieut. (Temp. Lieut.) W. C. Mitchell, R.F.A., S.R.; Feb. 1st.

**Memoranda.**—The undermentioned, from R.F.C., to be Temp. 2nd Lieuts. (on prob.), for duty with the Mil. Wing of that Corps: 2nd Cl. Air-Mech. W. W. Foster; May 4th. Sergt. H. F. Unwin; May 8th.

**Supplementary to Regular Corps.**—Lieut. (Temp. Capt.) H. B. T. Childs to be Capt.; April 1st. The undermentioned 2nd Lieuts. (on prob.) are confirmed in their rank: S. E. Brett, R. H. Lloyd, U. H. Seguin, A. L. Thomas, W. H. Glaser, G. F. Allison, D. Gow, O. C. Holleran, G. J. T. Young, R. S. Bennie, W. H. St. J. Perram, D. E. Rodwell, C. L. de Beer. C. B. Charlewood to be 2nd Lieut. (on prob.); Mar. 24th.

#### London Gazette Supplement, May 26th.

To be 2nd Lieut. for service in the field for duty with R.F.C.—Actg. Sgt. Maj. C. Mullen, from R.F.C.; April 10th.

To be Temp. 2nd Lieut. for duty with R.F.C.—Flight Sgt. C. Ryder, from R.F.C.; April 21st.

**Squadrons Commanders.**—From Flight Commanders and to be Temp. Maj. whilst so employed:—Lieut. (Temp. Capt.) A. W. C. V. Parr, Rif. Brig.; April 23rd. Temp. Capt. G. H. Norman, Gen. List; May 3rd.

**Flying Officers.**—Temp. 2nd Lieut. T. K. Breakell, Gen. List; Mar. 19th. 2nd Lieut. W. L. Mills, R.A., from a Flying Officer (Ob.); April 11th, seniority Dec. 28th, 1915. 2nd Lieut. C. B. S. Spackman, Norf. R. (T.F.), and to be sec'd.; April 17th. 2nd Lieut. (Temp. Lieut.) A. J. G. Styrax, M.C., R.A., from a Flying Officer (Ob.); April 20th, seniority May 1st, 1916. 2nd Lieut. G. W. Foreman, S.R.; April 24th. Temp. 2nd Lieut. N. B. Harris, Gen. List, from a Flying Officer (Ob.), seniority Mar. 13th, 1916. Temp. 2nd Lieut. (on prob.) A. H. Waterman, Gen. List; April 25th. Capt. N. Senior, W. Rid. R. (T.F.), and to be sec'd.; April 26th. 2nd Lieut. W. H. St. J. Perram, S.R.; 2nd Lieut. G. J. T. Young, S.R.; April 28th. 2nd Lieut. L. G. Paling, (Notts) and Derby R., S.R., and to be sec'd.; 2nd Lieut. T. H. Coupe, E. Lan. R. (T.F.), and to be sec'd.; 2nd Lieut. A. J. L. O'Beirne, Yeo. (T.F.), and to be sec'd.; 2nd Lieut. R. H. Stacey, Yeo. (T.F.), and to be sec'd. 2nd Lieut. J. G. S. Candy,

R. Suss. R., and to be sec'd. 2nd Lieut. L. N. Waddell, S.R. 2nd Lieut. D. Sutherland, S.R.; Temp. 2nd Lieut. (on prob.) J. A. O'Sullivan, Gen. List; May 2nd. 2nd Lieut. E. Birch, E. Lan. E. (T.F.), and to be sec'd.; Capt. W. L. Bailey, Canadian Inf.; Lieut. A. C. Lee, Canadian Inf.; Temp. 2nd Lieut. B. B. Howe, Motor Mach. Gun Corps, and to be transf'd. to Gen. List; Temp. 2nd Lieut. A. S. White, Gen. List; May 3rd. Temp. Lieut. C. G. Ferrell, A.S.C., and to be transf'd. to Gen. List; Temp. 2nd Lieut. (on prob.) E. Foster, Gen. List; Temp. 2nd Lieut. (on prob.) S. C. Harker, Gen. List; 2nd Lieut. (on prob.) H. E. Fletcher, S.R.; May 4th. Temp. 2nd Lieut. (on prob.) W. Robson, Gen. List; Temp. 2nd Lieut. (on prob.) W. Howarth, Gen. List; 2nd Lieut. (Temp. Capt.) R. E. A. Dash, E. Sur. R. (T.F.), and to be sec'd.; 2nd Lieut. (Temp. Capt.) C. L. Philcox, E. Sur. R. (T.F.), and to be sec'd.; Lieut. L. J. MacLean, M.C., R.E.; 2nd Lieut. (on prob.) G. C. Atkins, S.R.; Temp. 2nd Lieut. (on prob.) F. Barrie, Gen. List; 2nd Lieut. (Temp. Lieut.) J. S. Campbell, Arg. and Suth'd. Highrs. (T.F.), and to be sec'd.; Temp. 2nd Lieut. (on prob.) C. H. C. Hawkes, Gen. List; May 5th. Lieut. T. Wells, M.C., Yorks. L.I., S.R., and to be sec'd.; Capt. H. C. Brocklehurst, Hrs., and to be sec'd.; May 7th. Lieut. F. L. B. Hebbert, R.F.A., S.R., from a Flying Officer (Ob.), seniority Feb. 29th, 1916; Lieut. W. A. Campbell, Canadian Inf.; 2nd Lieut. F. C. R. Jaques, Essex R. (T.F.), and to be sec'd.; Temp. 2nd Lieut. T. C. S. MacGregor, High L.I., and to be transf'd. to Gen. List; Temp. 2nd Lieut. (on prob.) T. A. Langford-Sainsbury, Gen. List; May 8th.

**Equipment Officers, 1st Class.**—Capt. H. Le Jeune, M.C., S.R., from the 2nd Cl. From the 2nd Cl., and to be Temp. Capt. whilst so employed:—Lieut. E. W. J. Payne, M.C., S.R.; 2nd Lieut. (Temp. Lieut.) O. H. Frost, Middx. R. (T.F.); Temp. Lieut. J. K. Mountain, Gen. List; Temp. Lieut. D. B. Cleghorn, Gen. List; 2nd Lieut. (Temp. Lieut.) J. Kemper, S. Lan. R.; May 1st.

**3rd Class.**—Temp. 2nd Lieut. J. R. Bedford, Gen. List; April 7th. **Memoranda.**—Actg. Sgt. J. R. Bedford, from R.F.C., to be Temp. 2nd Lieut. for duty with Mil. Wing of that Corps; April 7th.

To be Temp. 2nd Lieuts (on prob.) for duty with R.F.C.:—G. Adams; May 6th. 2nd Lieut. T. M. S. Jenkins, late R. Welsh Fus. (T.F.); A. Cragg, late Lieut., S. Afr. Inf.; May 7th.

**General List (R.F.C.).**—Temp. 2nd Lieut. J. Hancock resigns his commission; May 27th.

#### Aeronautical Inspection Department.

London Gazette, May 23rd.

2nd Lieut. (Temp. Lieut.) G. S. M. Taylor, R.E. (T.F.), to be Temp. Capt. (without Army pay or allowances) whilst employed as an Insp., Aeronautical Inspcn. Dept.; April 1st. Temp. Hon. Lieut. P. W. Smith, Gen. List, to be Temp. Hon. Capt. (without Army pay or allowances) whilst employed as an Insp., Aeronautical Inspcn. Depart.; April 1st. 2nd Lieut. T. H. L. Salisbury, R.F.C. (T.F.), to be Temp. Lieut. (without Army pay or allowances) whilst employed as an Asst. Insp., Aeronautical Inspcn. Dept.; Mar. 26th.



### FATAL ACCIDENTS.

AN inquest was held in Norfolk, on May 22nd, on Capt. J. F. St. John Annesley, R.A.M.C., and 2nd Lieut. C. L. Beaumont, R.F.C., who were killed while flying in an aeroplane on May 19th.

Lieut. Beaumont took the machine up with Dr. Annesley as a passenger.

An air-mechanic said he saw the machine at about 400 ft. It did a right bank, which developed into a spinning nose dive. Witness went to the wreckage, and found the doctor thrown clear, but the pilot was pinned underneath the machine.

Capt. P. W. Elliott said the doctor, who was 52 years of age, told him it was very difficult for him to judge the effect of flying on nerves until one had had personal experience. He asked if there would be any objection to him going up as a passenger, and witness said there would be none, as he would be doing it in his official capacity.

A verdict of Accidental Death was returned.

An inquest was held in Kent, on May 23rd, on Flight-Sergt. Rogers, holder of the D.C.M. and the Russian Order of St. George, and 2nd Air Mech. J. Paton. The machine was seen to loop twice, then heel-slide, and then nose-dive and crash to the ground. The machine burst into flames, but the doctor's evidence stated that the men were killed by the fall, and not by the flames, and a verdict to that effect was returned.

Another inquest was held on Capt. Tailford, M.C. The machine was seen spinning nose downwards, and fell into the aerodrome, the officer being killed instantly.

An officer stated that the accident was caused by an attempt to turn to the right without sufficient banking. Another officer was in the machine as a pupil, and was hurt, and remembers nothing of the accident. The machine was almost new, and the previous day the same two officers had

been up in the same machine for 35 minutes. A verdict of Death by Misadventure was returned.

A verdict of "accidental death" was returned, on May 24th, at Hove, at the inquest on 2nd Lieut. W. J. D. Vince and 2nd Lieut. C. S. Crapp, R.F.C., whose machines collided and fell while flying over the town on May 22nd.

The leader of the squadron of four said they were flying in diamond formation at a height of 4,500 ft. He gave the order for the formation to break up, and in carrying this out Crapp came into collision with Vince. Neither could see the other owing to the sun. Asked if there was not some unnecessary danger in manoeuvring over a town like that the officer replied, "No, not really. This was a most unlucky accident."

Two aviators were killed in a flying accident in Wiltshire on the evening of May 24th.

2nd Lieut. Scholfield, R.F.C., was killed at Hungerford on the evening of May 26th. An Army biplane was seen at a great height, and the unusual sounds made by the engine indicated that something was wrong. Suddenly the machine was seen to pitch and turn over, and then it fell into a garden. The occupant, Lieut. Scholfield, was killed instantly.

A verdict of "Accidental Death" was returned at a Westminster inquest, on May 28th, on 2nd Lieut. Stanley Morrell Johnson, R.F.C. While preparing for a flight his machine was travelling along the ground, when a sudden gust of wind turned it over. By some means the aeroplane caught fire, and before deceased could be released he had been badly burned, dying in Queen Alexandra Hospital, London, on May 18th. Just before his death he stated that it was an accident due to a gust of wind blowing the aeroplane over, and that he was just running along the ground when the mishap occurred.

#### Aeroplane Falls on a Crowd.

AFTER giving a display of flying, including looping the loop, in connection with a food economy campaign at Southwick-on-Wear, near Sunderland, on May 24th, an aeroplane collided with a flagstaff and fell on the crowd. A woman and a boy were killed outright, the boy being decapitated, while three men were so seriously injured that they died during the night.

#### Prominent French Pilot Killed.

FLIGHT LIEUTENANT JEAN DE BOISDEFRE, son of General Boisdefre, who was formerly Chief of the General Staff of the French Army, has died as the result of an accident while landing after an aerial expedition. Lieutenant Boisdefre had been four times mentioned in despatches.

#### What America is Doing.

IN a summary issued by the Press Bureau of what the United States has accomplished in the seven weeks since she declared war, it is stated arrangements have been made for the construction of 3,500 war aeroplanes and for the training of 6,000 aviators this year.

#### French Submarine v. Hun Aeroplane.

IT is announced from Paris that Lieutenant Gambourg, Commander of the submarine "Circe," has been made a Chevalier of the Legion of Honour for torpedoing an enemy submarine under difficult conditions and saving his own vessel by skilful seamanship from destruction by bombs dropped from an aeroplane by which the enemy submarine was accompanied.



# AIRCRAFT WORK AT THE FRONT.

## OFFICIAL INFORMATION.

### British.

*General Headquarters, May 21st.*

"There was great activity in the air yesterday. A number of successful bombing raids were carried out, and our aeroplanes co-operated actively with our infantry in their attacks, engaging German troops in the enemy's front line trenches with machine-gun fire. In air fighting seven German aeroplanes were brought down, one of which fell in our lines, and eight others were driven down out of control. Another hostile machine was shot down out of control by our anti-aircraft guns. Four of our aeroplanes are missing."

*General Headquarters, May 22nd.*

"One German aeroplane was brought down yesterday in air fighting, and one other hostile machine was driven down out of control. One of our aeroplanes is missing."

*General Headquarters, May 23rd.*

"Owing to unfavourable weather conditions there was less activity in the air yesterday, and little fighting. One German aeroplane was driven down out of control."

*General Headquarters, May 24th.*

"Activity in the air increased yesterday, and a number of fights took place. Five German machines were brought down by our aeroplanes, and six other hostile machines were driven down out of control. Three of our aeroplanes are missing."

*General Headquarters, May 25th.*

"There was great activity in the air yesterday. Seven German aeroplanes were brought down in air fighting, and five other hostile machines were driven down out of control. Six of our machines are missing."

*General Headquarters, May 26th.*

"Many reconnaissances and bombing raids were carried out by us yesterday. In air fighting five German aeroplanes were brought down and five others were driven down out of control. Five of our aeroplanes are missing."

*General Headquarters, May 27th.*

"Reconnaissances and bombing raids were continued actively yesterday by our aeroplanes. A large number of fights took place, in the course of which 12 German machines were destroyed and 10 others were driven down out of control. One other hostile machine was shot down by our anti-aircraft guns. Three of our aeroplanes are missing."

### French.

*Paris, May 22nd.*

"During the 21st our pilots brought down two German captive balloons, which fell in flames."

*Paris, May 23rd.*

"It is confirmed that two further German machines were brought down by our pilots—one on May 13th and the other on the 18th."

*Paris, May 24th.*

"During the night of the 23rd our bombarding aeroplanes dropped 2,200 kilogrammes (about two tons) of bombs on the railway stations in the region of Réthel, where fires broke out."

"Salonica.—British aircraft bombarded an enemy convoy in the Rupel Pass [Struma Front]."

*Paris, May 26th.*

"During the 23rd, 24th, and 25th our pilots brought down in aerial combats 10 enemy aeroplanes. Seventeen other machines were obliged to land in a damaged condition behind their own lines."

"During numerous bombardments carried out by our air squadrons in the same period the railway stations of Mars la Tour, Chambley, Conflans, Vouziers, and Anizy, and the bivouacs in the region of Laon received numerous projectiles. In all 13,000 kilogrammes of explosives were dropped, causing considerable damage."

*Paris, May 27th.*

"On May 26th our pilots brought down four German aeroplanes. On the night of May 26th-27th our bombing groups dropped 3,300 kilogrammes of projectiles on the enemy's military establishments and factories. Several fires, one of them very violent, broke out in the bombarded buildings. The aviation grounds of Colmar and of Sissone and the German organisations in the region of Laon also received numerous bombs."

*Paris, May 28th.*

"The air activity was very considerable yesterday and last night. Enemy machines dropped some bombs in the region of Baccarat, Nancy, and Pont St. Vincent, doing unimportant damage. Our air squadrons carried out numerous flights, during which they dropped nearly 7,000 kilogrammes (seven tons) of bombs on enemy military establishments and railway

lines, particularly in Champagne and in the region of Thionville.

"Nine enemy aircraft were brought down, and two were obliged to land within our lines. Five others which were heavily struck were forced to land within the enemy's lines."

### Russian.

*Petrograd, May 23rd.*

"About 3 p.m. an enemy squadron, composed of three machines, dropped 20 bombs on the village of Jablonoff (north-east of Halicz.)"

*Petrograd, May 25th.*

"An enemy aviator has dropped bombs on Chlok, to the west of Riga. On May 10th, to the south-east of Halicz, an encounter took place between an enemy Albatros machine and the Russian Captain Modrah. The enemy machine fell behind the German lines, and was destroyed by our artillery. The pilot was wounded, and, according to the observations of our infantry, was carried away by enemy soldiers."

*Petrograd, May 27th.*

"On May 25th our aeroplanes made a raid on the railway station of Pinsk, where they dropped six bombs, which were observed to hit the railway line and also to cause an outbreak of fire in the western part of the town."

*Petrograd, May 28th.*

"Twelve bombs were thrown from enemy aeroplanes upon our aerodrome north-west of Lunintsa."

### Italian.

*Rome, May 21st.*

"Two enemy machines were brought down during air fighting."

*Rome, May 22nd.*

"During the night of the 21st one of our airships bombed the enemy's rear lines near Vogrisca, in the Frigido Valley, and returned safely to its base."

*Rome, May 24th.*

"Our air squadrons, 130 machines, including a group of navy seaplanes, took part in the battle (on the Carso), and dropped ten tons of bombs on the enemy's lines, and brought their machine guns to bear on masses of the enemy. Our airmen all returned safely."

*Rome, May 25th.*

"Aircraft was very active. Squadrons of our machines bombed the station of Santa Lucia of Tolmino with visibly effective results. Three enemy machines were brought down by our airmen."

"At daybreak to-day, with the object of assisting the offensive which is developing on the Carso, British monitors with naval forces and Italian aeroplanes made a prolonged and effective attack with heavy guns in the Gulf of Trieste on the rear of the enemy's lines, especially the great aerial station, depôts, and other important military objects near Prosecco."

"The enemy's repeated aerial attacks had no other result than the loss of two of his seaplanes, which were brought down by our airmen. Four enemy airmen were rescued by our naval units, in spite of the fire from the enemy's batteries. All the naval and aerial units which took part in this action returned to their bases without having sustained the slightest damage. No enemy flag was seen at sea with the exception of those on the aeroplanes which we brought down."

*Rome, May 26th.*

"Our airmen flew in great numbers over the enemy's rear lines yesterday, bombed railway works, ammunition dumps, and batteries, and attacked the enemy infantry on the march with machine guns. All returned safely. One enemy machine was brought down."

*Rome, May 27th.*

"Our aircraft continued their successful bombing raids on the enemy's communications. The railway station of S. Lucia, of Tolmino, was severely damaged. Our machines all returned safely. During air fighting above Britovo one enemy machine was brought down, while another fell in flames near Vertoiba."

*Rome, May 28th.*

"Enemy aircraft bombed localities on the Lower Isonzo, causing a few casualties. Another raid was made against Chiusaforte (without ?) damage."

### Serbian.

*Salonica, May 21st.*

"Our aircraft were very active. About 100 bombs were thrown on enemy camps and depôts. Explosions of munitions were observed. In the course of an air fight an enemy aeroplane was forced to land south of Drenovo."

### German.

*Berlin, May 21st.*

"Yesterday also the enemy lost 14 aeroplanes."



Berlin, May 22nd.

"One of our raiding echelons ignited five enemy captive balloons in a simultaneous attack at Bouvancourt (north-west of Rheims)."

Berlin, May 24th.

"Yesterday 10 enemy aeroplanes and one captive balloon were brought down. Lieut. Schaefer shot down his 28th and 29th opponents. Lieut. Voss reached the same number of air victories by bringing down a machine. During the 21st and 22nd instant the English and French lost five aeroplanes in aerial battles and through anti-aircraft guns."

Berlin, May 25th.

"Yesterday the enemy lost 10 aeroplanes, which were brought down in aerial battles and by the fire of our anti-aircraft guns."

Berlin, May 26th.

"Yesterday the enemy lost 20 aeroplanes in numerous aerial engagements, and one other machine was brought down by our anti-aircraft guns. Lieut. Allmenröder brought down his 19th and 20th opponents."

Berlin, May 27th.

"On May 26th 15 enemy airmen were shot down. Lieut.

Voss has gained his 30th victory over opponents in aerial encounters."

Berlin, May 28th.

"Our airmen shot down 12 aeroplanes and two captive balloons."

Austrian.

Vienna, May 21st.

"Our aviators brought down five Italian aeroplanes in aerial battles."

Bulgarian.

Sofia, May 21st.

"Thirteen enemy warships bombarded Kavalla between 5 and 9 p.m., while 12 aeroplanes dropped bombs on the town. Several houses were destroyed, but no military damage was done. An enemy aeroplane was shot down."

Turkish.

Constantinople, May 25th.

"Two Turkish airmen landed with their machine near Salmore, 90 miles south-west of Gaza, and destroyed the telegraph lines and the British Army's water supply pipes. In spite of the attacks to which they were subjected by several reconnoitring patrols of enemy cavalry they returned safely."

## SIDE-WINDS.

AEROPLANE GENERAL SUPPLIES, LTD., have struck upon a really convenient point next door to Chancery Lane Tube Station, and the company are evidently working on up-to-date business lines, judging from their stock list and general information pamphlet just to hand. Manufacturers of aircraft who have not already received this little journal should send their name to the firm to be placed on the mailing list, for here are the hundred and one things required when building, which have an exasperating way of being short by just half a dozen or so at the last minute. In the A.G.S. list, there are "overs" from the orders of other customers. All are passed A.I.D., and catalogued under numbers and sizes precluding any mistake in ordering or failure to fit when received. Speed is everything, so note the 'phone number—Holborn, 4959. Call, or ring them up. It is more than probable that they have got just what you are short of and can deliver from stock.

In answer to several enquiries which have been made regarding the Turnbull-Feary note pad, we can now state that it is being placed on the market by Messrs. Dunhills, Ltd., of 359-361, Euston Road, N.W. 1. Two photos. which



The Turnbull-Feary Note Pad in Use.

are reproduced on this page give a general idea of the convenience of the little device, but in the latest model the pad consists of a series of cards in a frame, instead of a tear-off scribbling block.

THERE is a pleasure and a sense of satisfaction in knowing that such firm believers in the commercial future of aviation as Messrs. R. F. Mann and Robert P. Grimmer, who have already done so much on the experimental side of aeroplane building, are in process of coming together again, in association with Mr. Harley Bell of "Nonflamoid" fame. Early workers in the industry,

dating back to 1911, Mann and Grimmer put in their early training in construction as model makers, and in the course of time their factory at Surbiton was one of the chief centres of this branch of the industry. From these works the "Mann" model aeroplanes, flown and tested, with Mr. Mann's signature on the wing-tip, guaranteeing that each had flown a quarter of a mile, were despatched in great numbers throughout the world. Then came the work on full-sized machines, finishing for the time being with the twin-propeller pusher that was such a feature at Hendon during its trials. The construction of this machine, together with the troubles and trials besetting its makers, formed quite a romance, as may still be judged from the "story" which appeared in "FLIGHT" by Mr. Grimmer. The untimely fate of this machine is no doubt still fresh in the minds of many. Stress of circumstances, the war, and the calling up of men for the Army prevented the rebuilding of this fighter, or, rather, a second edition in better form, and incorporating the immense amount of valuable data gained. Messrs. Mann and Grimmer both joined the Army, from which, after six months' service in the Artists Rifles, Mr. Grimmer has now been liberated to again take up his work in aircraft construction. Mr. Grimmer has already joined forces with Mr. Harley Bell, and we understand Mr. Mann is likely to be soon in touch with them in the Designs Department. The Aircraft Construction Co., whose present works are at Becton Road, Plaistow, are undertaking for the moment the construction of parts only, and would be glad to hear from any firm who can make use of the power at their disposal. Both Mr. Bell and Mr. Grimmer are firm believers in the commercial future of aviation, and it is not part of the policy of the Aircraft Construction Co. to drop out of the industry at the termination of the war. Large extensions in the neighbourhood of Hendon are contemplated, where output both of parts and complete machines will be on a very large scale. Mr. William Gray, late works foreman of the old "Mann Grimmer" firm, and under whose supervision the "Mann" machines were constructed, will be in charge of the new firm's production, which in itself should be a guarantee of excellent workmanship. The Aircraft Construction Co. is going to specialise in very prompt deliveries of practically any aeroplane part, and its 'phone number is "East 1300." The nearest railway station is Custom House (G.E.R.), and there is an excellent train service both from Fenchurch Street and Liverpool Street.

MESSRS. JOHN REMER AND CO., LTD., announce that their address is now Cunard Building, Liverpool, and that their telephone number is "Bank 9004."

R. W. COAN, the popular and well-known founder of the Aluminium Foundry, 219, Goswell Road, E.C., has recently had fresh honours bestowed upon him by the residents of Clacton-on-Sea, where he has his summer home, Mr. Coan having been elected President of the Clacton-on-Sea Advancement and Advertisement Association.

This appointment is in a great measure due not only to Mr. Coan's reputation for benevolence and fraternalism, but also because of his success in letting the world know that "Coan casts clean crank cases." In accepting the honours thrust upon him, Mr. Coan said that he intended settling down





A couple of Palladium vehicles "delivering the goods" for "doping" the Huns over yonder. The Palladium lorries have given such a splendid account of themselves with the Emaillite firm that the original trial of one quickly materialised into repeat orders, which all helps to efficiency in the air.

in Clacton-on-Sea, and getting away, not only from business cares but from the details connected with the many benevolent associations of which he was a leading light. Mr. Coan said, however, that he recognised the spirit which prompted his fellow townsmen to elect him to this responsible position, and, in consenting to take it, he promised to do his best in his new capacity. Mr. Coan has presented the Swimming Club of the town with two magnificent cups to be competed for, one by ladies and one by gentlemen. He has also given the town a very fine bronze tablet to be placed on the turret of the band pavilion to commemorate the visit of His Majesty King George to Clacton-on-Sea last July.

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## R.F.C. Sports at Ascot.

NEARLY 5,000 people were attracted to the Ascot race-course on Monday by the programme of sports arranged by the members of the R.F.C. attached to an aircraft park in the Home Counties. The chief events were the race for the Ascot Cup presented by Viscount Churchill, which was competed for over the Gold Cup course, and a Marathon race for a cup presented by Capt. H. R. Vagg, from Windsor to Ascot. In both events First-Class Air-Mechanic Tier was the winner, his time for the 2½ miles being a few seconds under 12 minutes, while for the six miles he took between 38 and 39 minutes. In the latter, Third-Class Air-Mechanic Ray was second and Corporal Ray third. Both the high jump and the long jump were won by Second-Class Air-Mechanic Neal; for the former he did 5 ft. 2½ ins., and for the latter 17 ft. 6½ ins. The officers 100 yards race resulted as follows:—1, 2nd Lieut. Lewis; 2, 2nd Lieut. McKie; 3, 2nd Lieut. Pape. Time, 13 secs.

## German Seaplane in Holland.

A GERMAN seaplane landed on May 29th near West Capelle sea dyke, on the island of Walcheren; the pilot, an officer, was placed under a military guard.

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## NEW COMPANIES REGISTERED.

**BRITISH LIGHTING AND IGNITION CO., LTD.**—Capital £100,000, in £1 shares. Manufacturers of motor cars, railway rolling-stock, aircraft and parts and accessories thereof, &c. The Board of Trade has authorised this company to acquire the undertaking of the Bosch Magneto Co., Ltd., the books and documents of which are liable to inspection under the Trading with the Enemy Act.

**BRITISH MAGNETOS, LTD.**, 8, Bream's Buildings, Chancery Lane, W.C.—Capital £100, in £1 shares. Manufacturers of plural and single cylinder magnetos for motor cars, aircraft and other engines, &c.

**KINGSBURY AVIATION CO., LTD.**—Capital £250,000, in 110,000 cumulative preference shares and 110,000 preferred ordinary shares of £1 each, and 600,000 deferred ordinary shares of 1s. each.

**RICHMOND ENGINEERING CO., LTD.**, 319, High Holborn, W.C.—Capital £2,000, in £1 shares. Manufacturers of and dealers in aircraft, motor cars, &c. First directors: W. E. Lloyd, L. M. Bonas and Gustave Hardt (member of Brussels Stock Exchange).

## UNAFFILIATED MODEL CLUBS DIARY AND REPORTS.

Club reports of chief work done are published monthly. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

**Flusbury Park and District** (29, ASHLEY ROAD, CROUCH HILL, N. 19).

*Monthly Report.*—During the past and present month the few members that are left, have been out with models on no less than six occasions. On April 14th though wet at the beginning of the afternoon, four members were out with tractor models. Mr. Burchell was flying a 3-foot model fitted with a 52-in. wing which made some fine high flights, and on one occasion went over the railway and returned to the flying ground again. Mr. Coleman was giving a display with a small fast machine and obtained some fine flights. Mr. Richards had out his 3-ft. 9-in. model, but owing to wing trouble he did not make such good flights as usual. Mr. Stansell was flying his usual model in very good style. On the 28th, the weather was ideal for flying, but unfortunately only two members were able to put in appearance. Mr. Coleman had his old 'bus which has been fitted with a new chassis and made some very high flights. Mr. Stansell was flying his old machine fitted with a new tractor screw, which added a great improvement to the flying of his model. May 2nd, Cadet Rayner (who being home on leave) was out flying with his model and made some good flights. Mr. Coleman was also flying his old model, which had a great liking for tall trees, and it was not with little effort on the part of Messrs. Rayner and Coleman, it was brought down to the flying ground. On the 5th, the wind declared war on the models and no great flights were obtained. On the 12th, the wind gave another onslaught, but this time the models proved victorious. Mr. Burchell was flying a smaller machine than usual, which gave good results. Mr. Coleman had out his usual model, which is becoming quite a veteran, having been out on no less than 42 occasions. Mr. Stansell was flying his model very successfully. On the 13th the weather was ideal for flying, being quite calm and hot. Three members were out with models. Mr. Coleman made some fine high flights, and on one occasion landed nearly ¼ mile away. Mr. Burchell was flying his small model, and gave a display of high flying, and climbing in spirals. Mr. Richards had a new model which after being tuned up, made some good flights.

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